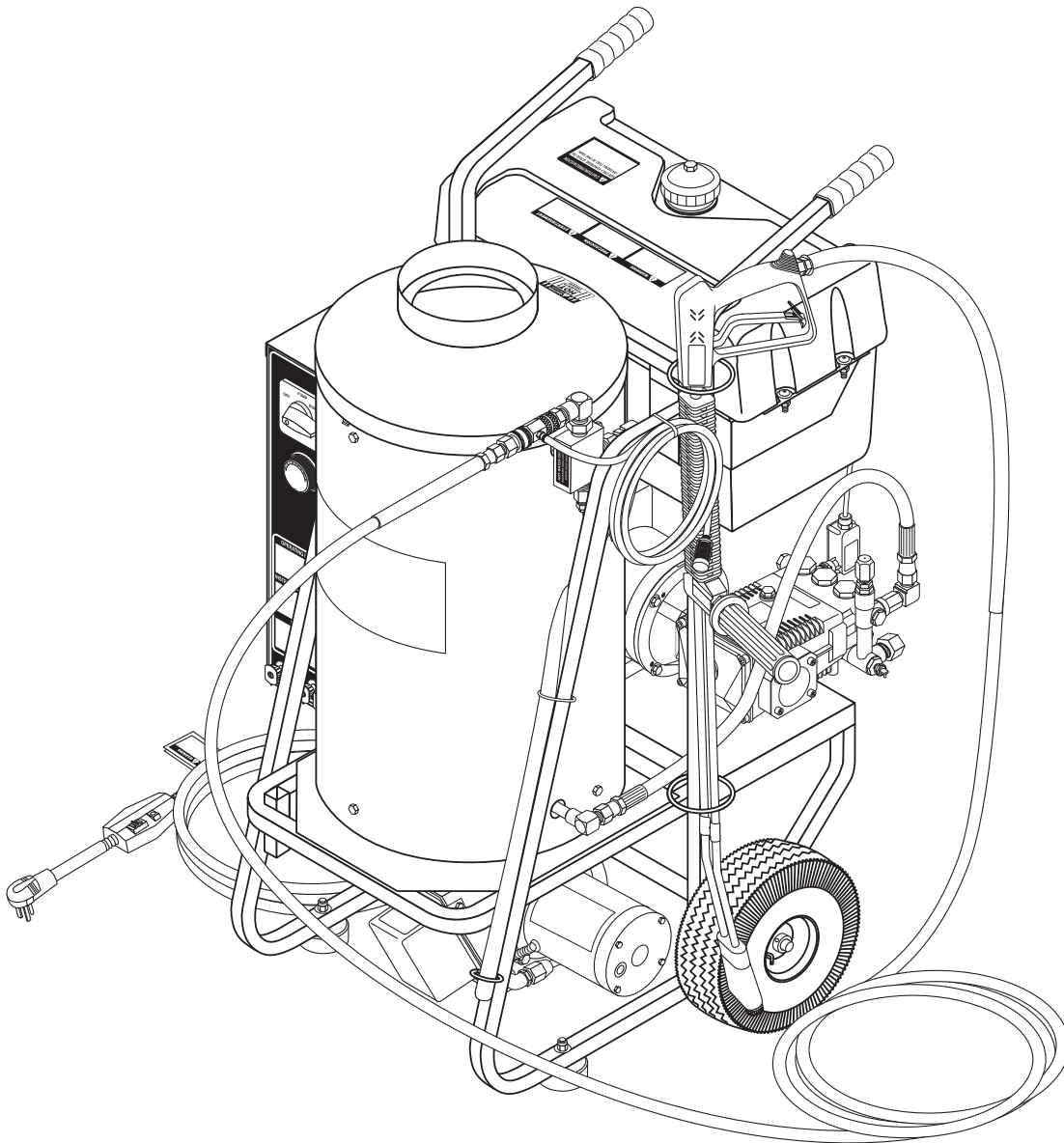




MODEL: HPB

OPERATING INSTRUCTION AND PARTS MANUAL

■ HPB-2011 ■ HPB-3520 ■ HPB-3530 ■ HPB-4020



For technical assistance or the Shark dealer nearest you, call 1-800-771-1881
or visit our website at www.shark-pw.com

MACHINE SPECIFICATIONS

● **Pump Volume At Pump Head:**

2011	2.0 GPM
3520	3.5 GPM
3530	3.5 GPM
4020	4.2 GPM

● **Total Machine Amperage:**

2011	15 Amps
3520	22 Amps
3530	29 Amps
4020	29 Amps

● **Pump Pressure At Pump Head:**

2011	1000 PSI
3520	2000 PSI
3530	3000 PSI
4020	2000 PSI

● **Pump Pressure At Pump Head:**

2011	300 Lbs.
3520	340 Lbs.
3530	515 Lbs.
4020	515 Lbs.

● **Machine Voltage:**

2011	120V/1PH
3520	230V/1PH
3530	230V/1PH
4020	230V/1PH

● **Machine Dimensions:**

2011	Length = 31" Width = 23" Height = 40"
3520	Length = 28" Width = 28" Height = 43"
3530	Length = 41" Width = 32" Height = 44"
4020	Length = 41" Width = 32" Height = 44"

CONTENTS

Introduction & Important Safety Information	4-5
Component Identification	6-8
Assembly Instructions	9
Installation	10
Operating Instructions	11
Detergents & General Washing Techniques	12
Shut Down & Clean-up	13
Storage	13
Troubleshooting	14-16
Maintenance & Oil Change Record	17
Preventative Maintenance	18-20
2011 Exploded View & Parts List	21-23
2015, 3520 Exploded View & Parts List	24-26
3530, 4020 Exploded View & Parts List	27-29
2011 Control Panel & Parts List	30
2015, 3520 Control Panel & Parts List	31-32
3530, 4020 Control Panel & Parts List	33-34
3530, 4020 Float Tank Option & Parts List	35-36
Steam Options & Parts Lists	37
Auto Start/Stop Options Exploded Views and Parts Lists	38-41
Hose & Spray Gun Assembly & Parts List	42
Burner Specifications	43
Pump Specifications	44-45
Unloader Exploded Views and Parts List	46-48
Pump Exploded Views and Parts List	49-53

Warranty

Model Number _____

Serial Number _____

Date of Purchase _____

The model and serial numbers will be found on a decal attached to the pressure washer. You should record both serial number and date of purchase and keep in a safe place for future reference.

INTRODUCTION & IMPORTANT SAFETY INFORMATION

Thank you for purchasing a hot water pressure washer.

This manual covers operation and maintenance of your pressure washer. All information in this manual is based on the latest product information available at the time of printing.

We reserve the right to make changes at any time without incurring any obligation.

Owner/User Responsibility:

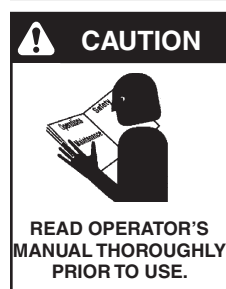
The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this pressure washer. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.

Owner and/or user must study and maintain for future reference the manufacturers' instructions.

This manual should be considered a permanent part of the machine and should remain with it if machine is resold.

When ordering parts, please specify model and serial number.

IMPORTANT SAFETY INFORMATION



CAUTION: To reduce the risk of injury, read operating instructions carefully before using.

1. Read the owner's manual thoroughly. Failure to follow instructions could cause malfunction of the machine and result in death, serious bodily injury and/or property damage.
2. All installations must comply with local codes. Contact your electrician, plumber, utility company or the selling distributor for specific details.
To comply with National Electrical Code (NGPA 70) and provide additional protection from risk of electric shock, this hot water pressure washer is equipped with a UL approved ground fault circuit interrupter (GFCI) power cord.



WARNING: Flammable liquids can create fumes which can ignite causing property damage or severe injury.

WARNING: Do not use gasoline, crankcase drainings or oil containing gasoline, solvents or alcohol. Doing so will result in fire and/or explosion.

WARNING: Do not spray flammable liquids. Operate only where an open torch is permitted.

3. This fuel burning machine shall be installed only in locations where combustible dusts and flammable gases or vapors are not present.
4. Use only kerosene, No.1 home heating fuel, or diesel fuel.



WARNING: Keep water spray, wand and high pressure hose away from electrical wiring or fatal electric shock may result. Read warning tag on electrical cord.

5. To protect the operator from electrical shock, the machine must be electrically grounded.

It is the responsibility of the owner to connect this machine to a UL grounded receptacle of proper voltage and amperage ratings. Do not spray water on or near electrical components. Do not touch machine with wet hands or while standing in water. Always disconnect power before servicing.

CAUTION: Spray gun kicks back — hold with both hands.

6. Grip cleaning wand of attached pressure washer securely with both hands before starting cleaner. Failure to do this could result in injury from a whipping wand.



WARNING: High pressure stream of fluid that this equipment can produce can pierce the skin and its underlying tissues, leading to serious injury and possible amputation.

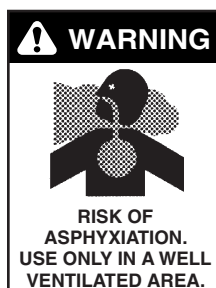
7. High pressure developed by the attached pressure washer can cause bodily injury or damage. Use caution when operating. Do not point the spray gun at anyone or at any part of the body. This machine is to be used only by qualified operators.
8. Never make adjustments on machine while it is in operation.

IMPORTANT SAFETY INFORMATION



WARNING: High pressure spray can cause paint chips or other particles to become airborne and fly at high speeds.

9. Eye, hand and foot safety devices must be worn when using this equipment.



WARNING: Risk of asphyxiation — Use this product only in a well ventilated area.

10. When the machine is working, do not cover or place in a closed space where ventilation is insufficient.



WARNING: Risk of fire. Do not add fuel when the machine is operating or still hot.

11. Machines with a spray gun should not be operated with the spray gun in the off position for extended periods of time as this may cause damage to the pump. Check to

make sure burner shuts off when spray gun trigger is closed.

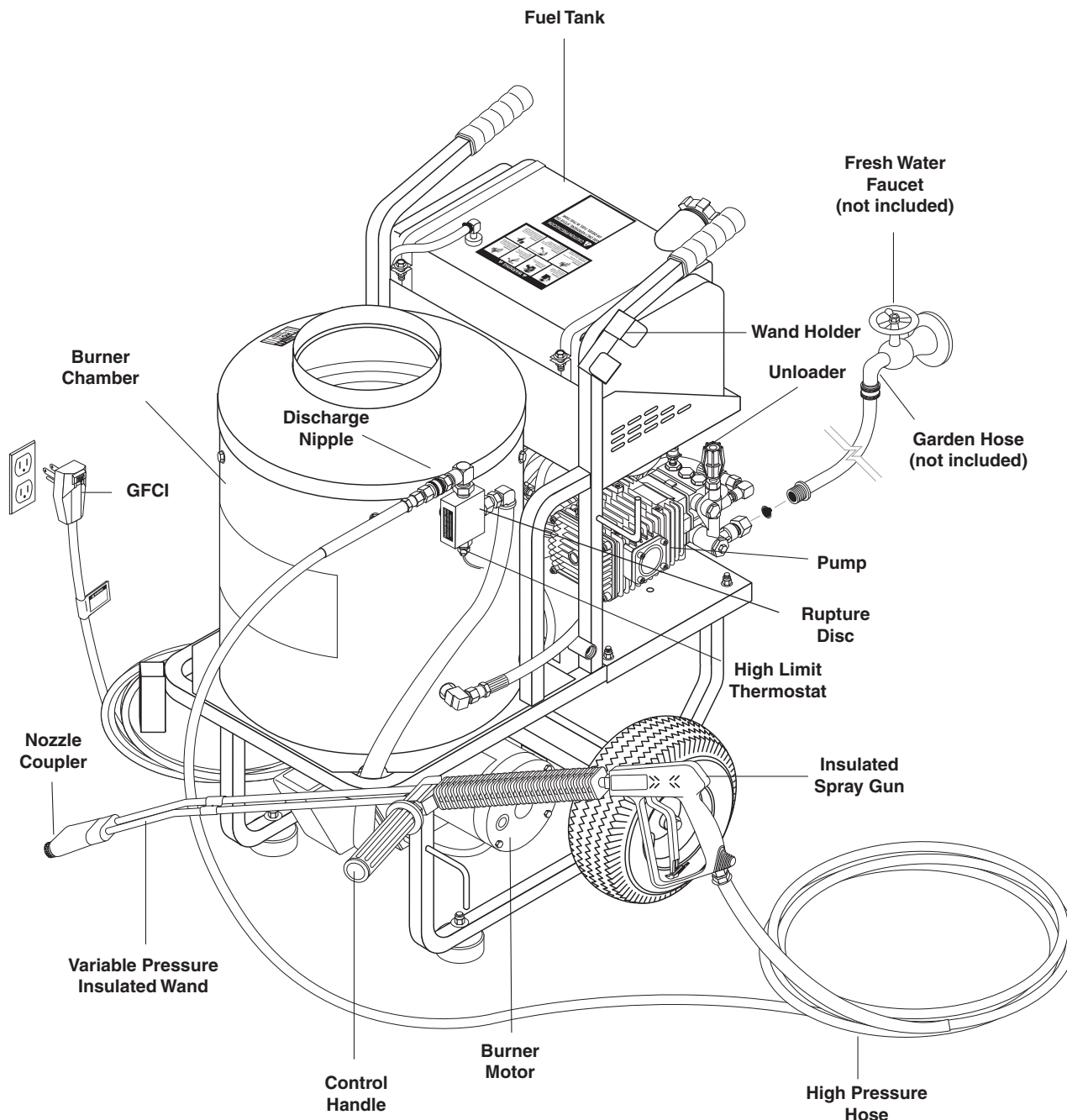
12. Protect from freezing.
13. To prevent a serious injury, make certain quick coupler on discharge hose has locked before using pressure washer.

14. Do not allow acids, caustic or abrasive fluids to pass through the pump.
15. Inlet water must be cold and clean fresh water.
16. Do not allow CHILDREN to operate the pressure washer at any time. **THIS MACHINE MUST BE ATTENDED DURING OPERATION.**
17. The best insurance against an accident is precaution, and knowledge of the machine.
18. Do not operate this product when fatigued or under the influence of alcohol or drugs. Keep operating area clear of all persons.
19. We will not be liable for any changes made to our standard machines, or any components not purchased from us.
20. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
21. Follow the maintenance instructions specified in the manual.
22. When making repairs disconnect from electrical source.
23. Before disconnecting high pressure hose from hot water outlet, turn off burner to allow water to cool to 100°F, then turn off pump motor and water supply and operate spray gun to relieve back pressure in hose. This will prevent coil damage from thermal expansion.

CAUTION: This machine produces hot water and must have insulated components attached to protect the operator.

CAUTION: Inspect rupture disc and pressure relief devices annually for any obstruction.

COMPONENT IDENTIFICATION - MINI SERIES



Pump — Develops high pressure.

Rupture Disc — Opens when pressure exceeds safe operating temperature.

Spray Gun — Controls the application of water and detergent onto cleaning surface with trigger device. Includes safety latch.

High Limit Thermostat — Controls water temperature.

Variable Pressure Control Wand — Must be connected to the spray gun. This wand handle controls discharge flow from one tube to both wand tubes. When water is discharged from both tubes you will have

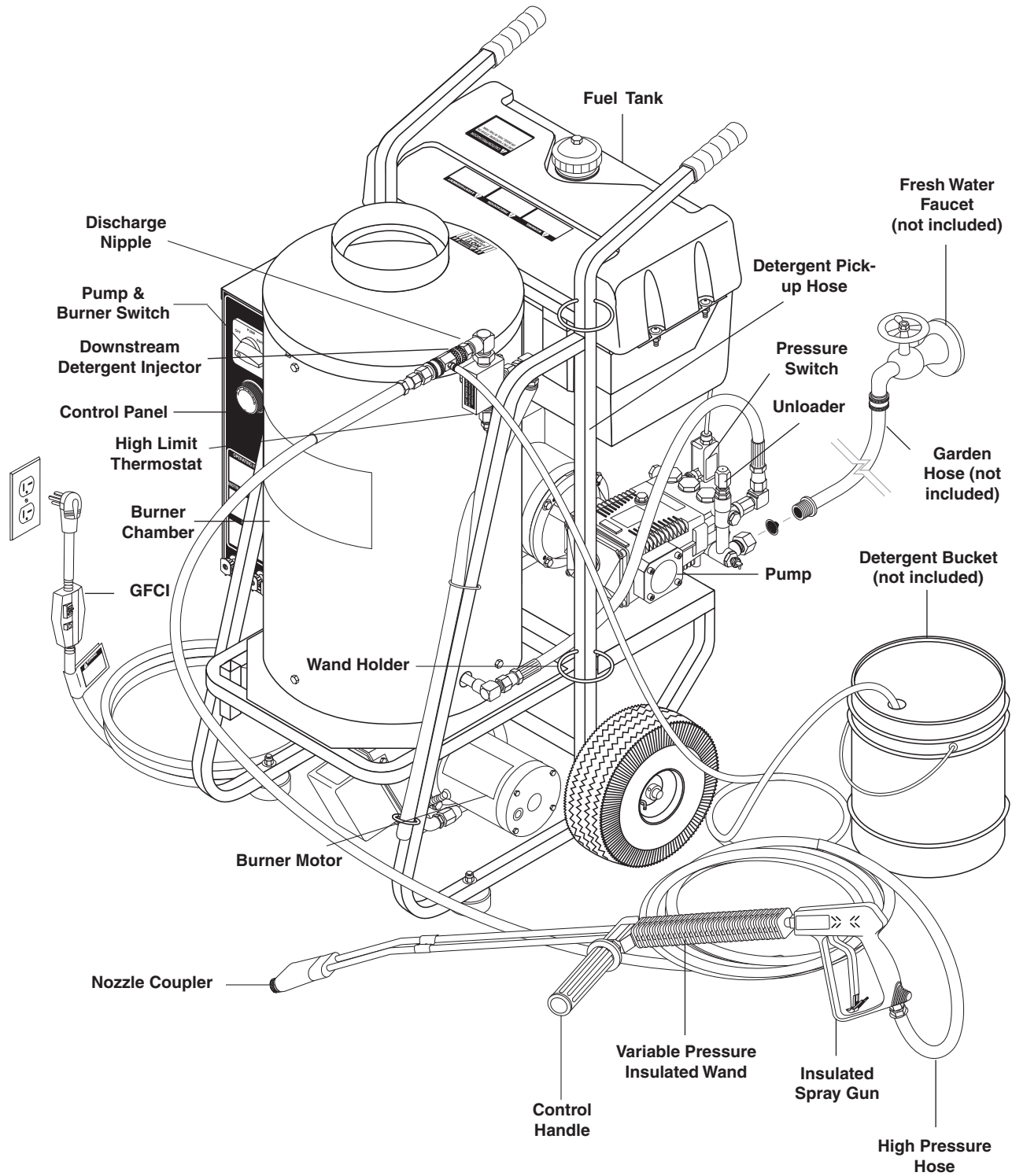
a pressure loss and allows chemical siphoning when used in combination with a detergent injector.

High Pressure Hose — Connect one end to water pump discharge nipple and the other end to spray gun.

Note: If trigger on spray gun is released for more than 2 minutes, water will leak from valve. Warm water will discharge from pump protector onto floor. This system prevents internal pump damage.

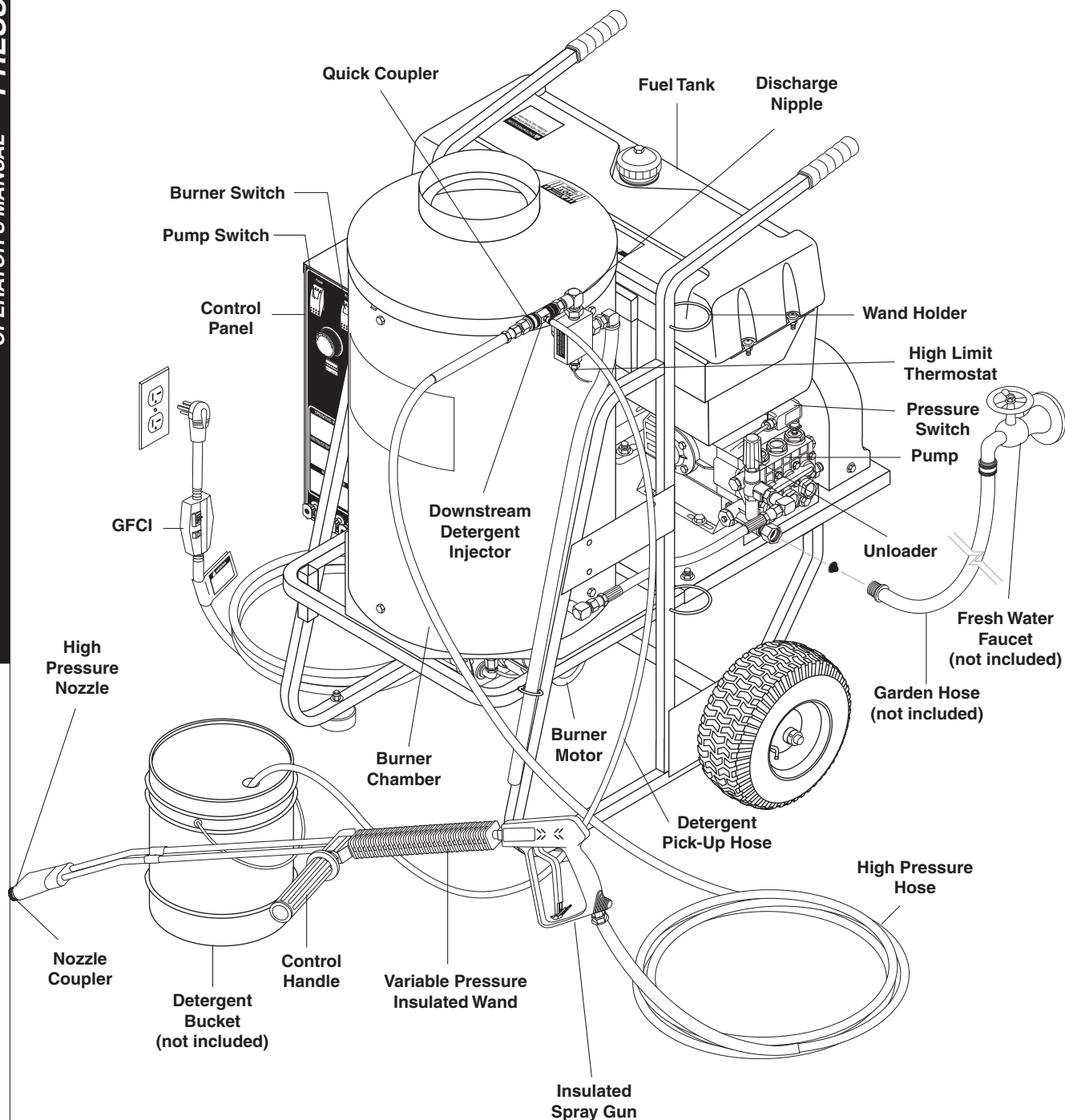
COMPONENT IDENTIFICATION - JUNIOR SERIES

CAUTION HOT WATER:
Must use insulated
spray gun and wand.

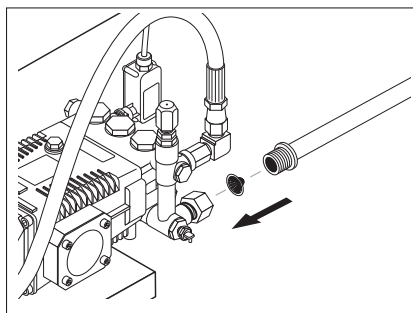


COMPONENT IDENTIFICATION - SENIOR SERIES

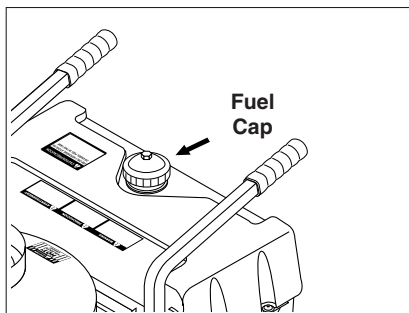
CAUTION HOT WATER:
Must use insulated
spray gun and wand.



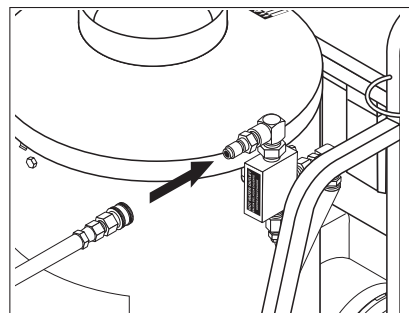
ASSEMBLY INSTRUCTIONS



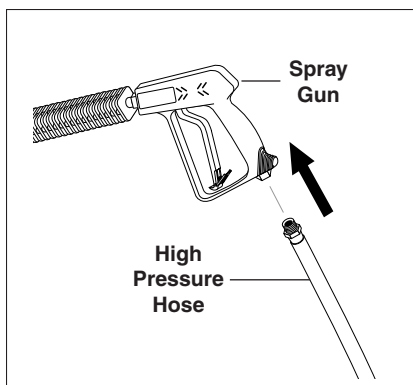
STEP 1: Connect water supply hose.



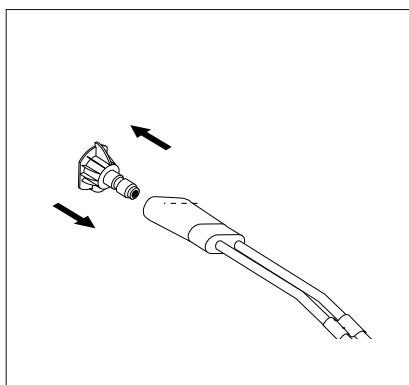
STEP 2: Check fuel tank and pump oil levels.



STEP 3: Connect high pressure hose to discharge nipple by sliding quick coupler collar back. Insert quick coupler onto discharge nipple and secure by pushing quick coupler collar forward.



STEP 4: Attach the high pressure hose to the spray gun using teflon tape on hose threads.



STEP 5: Connect the high pressure hose to the pump discharge fitting. Push coupler collar forward until secure.

INSTALLATION

Place machine in a convenient location providing ample support, draining and room for maintenance.

This machine is intended for outdoor use. Machine must be stored indoors when not in use.

Location:

The location should protect the machine from damaging environmental conditions, such as wind, rain, and freezing.

1. This machine should be run on a level surface where it is not readily influenced by outside sources such as strong winds, freezing temperatures, rain, etc. It should be located to allow accessibility for refilling of fuel, adjustments and maintenance. Normal precautions should be taken by the operator of the machine to prevent moisture from reaching the electrical controls.
2. It is recommended that a partition be made between the wash area and the machine to prevent water spray from coming in contact with the machine. Excess moisture reaching any electric components or electrical controls will reduce machine life and may cause electrical shorts.
3. During installation of the machine, beware of poorly ventilated locations or areas where exhaust fans may cause an insufficient supply of oxygen. Sufficient combustion can only be obtained when there is a sufficient supply of oxygen available for the amount of fuel being burned. If it is necessary to install a machine in a poorly ventilated area, outside fresh air may have to be piped to the burner and a fan installed to bring air into the machine.

Avoid small locations or areas near exhaust fans.

Electrical:

This machine, when installed, must be electrically grounded in accordance to local codes. Check for proper power supply using a volt meter.

Placement:

Do not locate near any combustible material. Keep all flammable material at least 20 feet away.

Allow enough space for servicing the machine.

Local code will require certain distances from floor and walls. (Two feet away from walls should be adequate.)

Water Source:

The water source for the pressure washer should be supplied by a minimum 5/8" I.D. garden hose with a city water pressure of not less than 30 PSI. If the water supply is inadequate, or if the garden hose is kinked, the attached pressure washer will run very rough and the burner will not fire.

Connection:

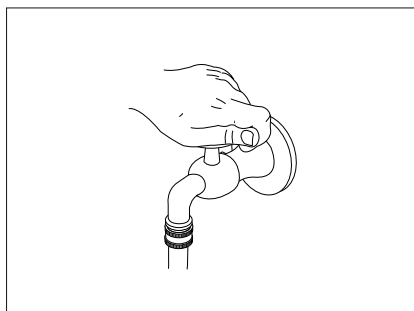
Connect the wand, nozzle, hose and spray gun (where applicable). On pipe thread connections, use teflon tape to avoid water leaks. (See Component Identification).

Venting:

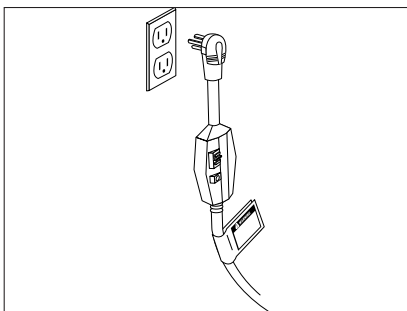
Adding exhaust vent pipe to your oil fired burner is not recommended because restricted air flow causes carbon build-up, which affects the operation, and increases maintenance on the coil. If a stack must be used, refrain from using 90° bends. If the pipe can not go straight up then use only 45° bends and go to the next size pipe. The overall pipe length must not exceed 6 feet in length*.

*Note: After vent pipe installation test burner using a smoke tester and adjust air setting to achieve a #3 or below results.

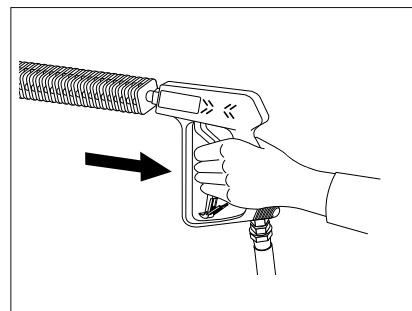
OPERATING INSTRUCTIONS



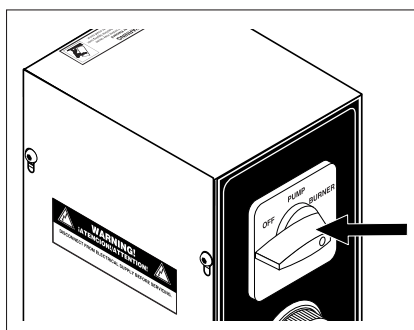
STEP 1: Turn water on.



STEP 2: Connect the power cord into the proper electrical outlet, then push in the GFCI reset button. (Refer to serial plate for information).

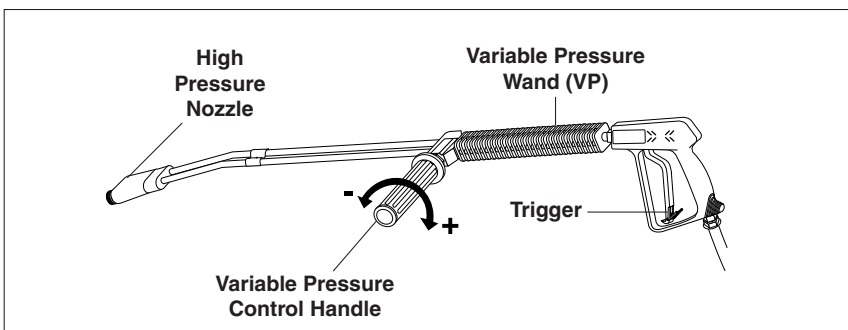


STEP 3: Grip spray gun handle securely and pull trigger. Then turn variable pressure control handle counterclockwise.



STEP 4: Turn switch to pump position. When a steady stream of water flows from the spray gun and wand the machine is ready for cold water cleaning by turning the variable pressure control handle clockwise to raise the pressure.

For hot water washing, turn the switch to the burner position. (The burner will light automatically when the trigger on the spray gun is pulled.)

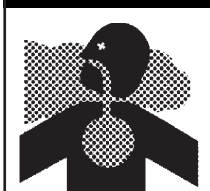


Selection of high or low pressure is accompanied by turning the handle.

Note: High pressure nozzle must be inserted at end of wand to obtain high pressure. To apply soap read operator's manual.

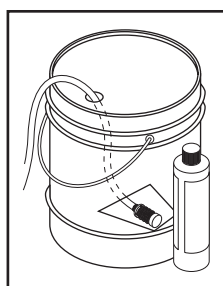
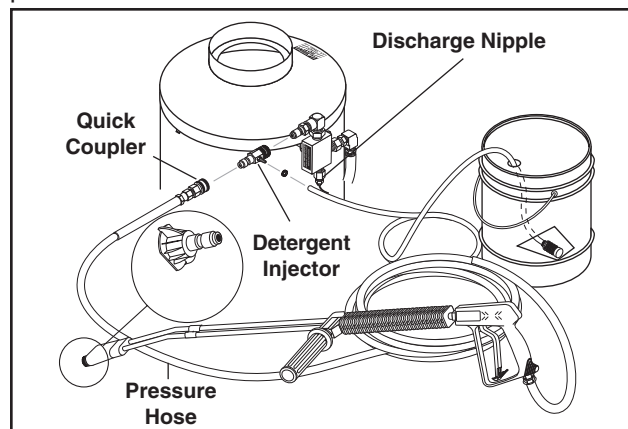
DETERGENTS & GENERAL OPERATING TECHNIQUES

WARNING



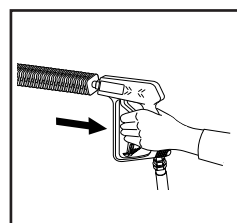
WARNING: Some detergents may be harmful if inhaled or ingested, causing severe nausea, fainting or poisoning. The harmful elements may cause property damage or severe injury.

STEP 1: Connect detergent injector to discharge nipple on machine, Connect high pressure hose to injector with quick coupler (check to make sure locking coupler sleeves are in proper position before applying water pressure)



STEP 2: Use detergent designed specifically for pressure washers. Household detergents could damage the pump. Prepare detergent solution as required by the manufacturer. Fill a container with pressure washer detergent. Place the filter end of detergent suction tube into the detergent container.

STEP 3: Apply safety latch to spray gun trigger. Turn variable pressure control handle until discharge water exits both tubes. Secure black detergent nozzle into quick coupler if you have a single wand. **NOTE:** Detergent cannot be applied using Red, Yellow, Green or White nozzles.



STEP 4: With the engine running, pull trigger to operate machine. Liquid detergent is drawn into the machine and mixed with water. Apply detergent to work area. Do not allow detergent to dry on surface.

THERMAL PUMP PROTECTION

If you run the engine on your pressure washer for 3-5 minutes without pressing the trigger on the spray gun, circulating water in the pump can reach high tempera-

tures. When the water reaches this temperature, the pump protector engages and cools the pump by discharging the warm water onto the ground. This thermal device prevents internal damage to the pump.

CLEANING TIPS

Pre-rinse cleaning surface with fresh water. Place detergent suction tube directly into cleaning solution and apply to surface at low pressure (for best results, limit your work area to sections approximately 6 feet square and always apply detergent from bottom to top). Allow detergent to remain on surface 1-3 minutes. Do not allow detergent to dry on surface. If surface appears to be drying, simply wet down surface with fresh water. If needed, use brush to remove stubborn dirt. Rinse at high pressure from top to bottom in an even sweeping motion keeping the spray nozzle approximately 1 foot from cleaning surface. Use overlapping strokes as you clean and rinse any surface. For best surface cleaning action spray at a slight angle.

Recommendations:

- Before cleaning any surface, an inconspicuous area should be cleaned to test spray pattern and distance for maximum cleaning results.
- If painted surfaces are peeling or chipping, use extreme caution as pressure washer may remove the loose paint from the surface.
- Keep the spray nozzle a safe distance from the surface you plan to clean. High pressure wash a small area, then check the surface for damage. If no damage is found, continue to pressure washing.

CAUTION - Never use:

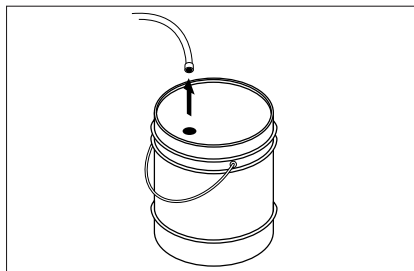
- Bleach, chlorine and other corrosive chemicals
- Liquids containing solvents (i.e., paint thinner, gasoline, oils)
- Tri-sodium phosphate products
- Ammonia products
- Acid-based products

These chemicals will harm the machine and will damage the surface being cleaned.

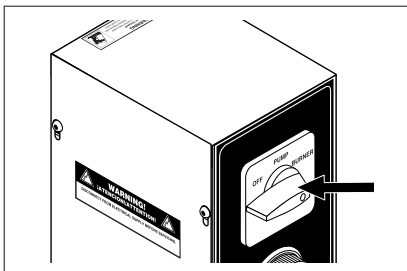
RINSING

It will take a few seconds for the detergent to clear. Apply safety latch to spray gun. Remove black soap nozzle from the quick coupler. Select and install the desired high pressure nozzle. **NOTE:** You can also stop detergent from flowing by simply removing detergent siphon tube from bottle.

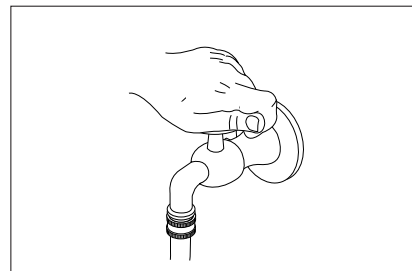
SHUTTING DOWN AND CLEAN-UP



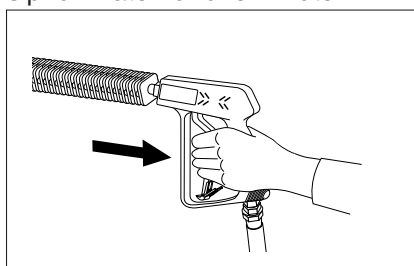
STEP 1: Remove detergent suction tube from container and insert into 1 gallon of fresh water. Turn variable pressure wand handle for low pressure or connect the black detergent nozzle. Pull trigger on spray gun and siphon water for one minute.



STEP 2: Turn burner switch off and continue spraying water, allowing the water to cool. After water has cooled to less than 100°F, turn the attached pressure washer off.



STEP 3: Turn off water supply.



STEP 4: Open the spray gun to relieve remaining pressure.

STORAGE

CAUTION: Always store your pressure washer in a location where the temperature will not fall below 32°F (0°C). The pump in this machine is susceptible to permanent damage if frozen. **FREEZE DAMAGE IS NOT COVERED BY WARRANTY.**

1. Stop the pressure washer, squeeze spray gun trigger to release pressure.
2. Detach water supply hose and high pressure hose.
3. Turn on the machine for a few seconds, until remaining water exits. Turn motor off immediately.
4. Drain the fuel from the fuel tank.
5. Do not allow high pressure hose to become kinked.
6. Store the machine and accessories in a room which does not reach freezing temperatures.

CAUTION: Failure to follow the above directions will result in damage to your pressure washer.

When the pressure washer is not being operated or is being stored for more than one month, follow these instructions:

1. Replenish pump oil to upper level.
2. Drain fuel from fuel tank, fuel line and filter.
3. Cover the pressure washer and store in a clean, dry place that is well ventilated away from open flame or sparks.

After Extended Storage



CAUTION: Prior to restarting, thaw out any possible ice from pressure washer hoses, spray gun or wand.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
BURNER WILL NOT LIGHT	Disconnected or short in electrical wiring	All wire contacts should be clean and tight. No breaks in wire.
	Burner motor thermal protector tripped	If tripped, check voltage, connections and extensions for cause. Check fuel pump shaft rotation for binding, causing motor to over-heat.
	ON-OFF switch defective	Check continuity through burner switch.
	Heavy sooting on coil and burner, can cause interruption of air flow and shorting of electrodes	Clean as required.
	Improper electrode setting	Clean and test according to diagram in operator's manual.
	Fuel not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid valve on machines with spray gun control for proper on-off flow switch.
	Fuel solenoid malfunction	Check by placing screwdriver inside coil then turn machine on, open spray gun and check for magnetic pull.
	Clogged burner nozzle	Replace.
	Water not turned on	Turn on water to activate burner pressure switch.
	Pressure switch malfunction	Remove, test for continuity and replace as needed.
MACHINE SMOKES	Improper fuel or water in fuel	Drain tank and replace contaminated fuel.
	Low fuel pressure	Adjust fuel pump pressure to specifications.
	Air leaks in fuel lines	Check fuel lines for leaks or air bubbles. Tighten or replace as needed.
	Plugged or dirty burner nozzle	Replace.
	Faulty burner nozzle spray pattern	Replace nozzle.
	Heavy accumulation of soot on coils and burner assembly	Remove coils and burner assembly. Clean thoroughly.
	Misaligned electrode	Realign electrodes to specifications.
	Fuel filter partially clogged	Replace as needed.
	Obstruction in smoke stack	Check for insulation blockage or other foreign objects.
	Soot build up on coils	Clean coils with soot remover.
	Lime build up in coils	Clean inside of coils using coil cleaner.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW WATER TEMPERATURE	Improper fuel or water in fuel	Drain fuel tank and replace with proper fuel.
	Low fuel pressure	Increase fuel pressure.
	Weak fuel pump	Check fuel pump temperature. Replace pump if needed.
	Fuel filter partially clogged	Replace as needed.
	Soot build up on coils	Clean coils with soot remover.
	Lime build up on coils	Clean inside of coils using coil cleaner.
	Improper burner nozzle	See Burner Specifications.
WATER TEMPERATURE TOO HOT	Incoming water to machine warm or hot	Lower incoming water temperature.
	Fuel pump pressure too high	Lower fuel pressure.
	Fuel pump defective	Replace fuel pump.
	Detergent line sucking air	Tighten all clamps. Check detergent line for holes.
	Defective high limit switch (thermostat)	Replace.
	Incorrect fuel nozzle size	See Burner Specifications.
	Insufficient water supplied	Check GPM to machine.
	Restricted water flow	Check nozzle for obstruction, proper size.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	Faulty pressure gauge	Install new gauge.
	Insufficient water supply	Use larger garden hose; clean filter washer at water inlet.
	Old, worn or incorrect spray nozzle	Match nozzle number to machine and/or replace with new nozzle.
	Plumbing or hose leak	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or misadjusted unloader valve (where applicable)	Adjust unloader for proper pressure. Install repair kit when needed.
	Worn packing in pump	Install new packing kit.
	Fouled or dirty inlet or discharge valves in pump	Clean inlet or discharge valves.
	Worn inlet or discharge valves	Replace with valve kit.
DETERGENT NOT DRAWING	Air leak	Tighten all clamps. Check detergent lines for holes.
	Valve in the injector head may be blocked, dirty or damaged	Clean or replace valve in injector.
	Filler screen on detergent suction hose plugged	Clean or replace.
	Dried up detergent plugging metering valve	Disassemble and clean thoroughly.
	High viscosity of detergent	Dilute detergent to specifications.
	Hole in detergent line(s)	Repair hole.
	Low detergent level	Add detergent if needed.
	Discharge water temperature above 180°F.	Lower discharge water temperature.
PUMP RUNNING NORMALLY BUT PRESSURE LOW ON INSTALLATION	Pump sucking air	Check water supply and possibility of air seepage.
	Valves sticking	Check and clean or replace if necessary.
	Unloader valve seat faulty	Check and replace if necessary.
	Nozzle incorrectly sized	Check and replace if necessary (See serial plate for proper size).
	Worn piston packing	Check and replace in necessary.
FLUCTUATING PRESSURE	Valves worn	Check and replace if necessary.
	Blockage in valve	Check and replace if necessary.
	Pump sucking air	Check water supply and air seepage at joints in suction line.
	Worn piston packing	Check and replace if necessary.
PUMP NOISY	Air in suction line	Check water supply and connections on suction line.
	Broken or weak inlet or discharge valve springs	Check and replace if necessary.
	Excessive matter in valves	Check and clean if necessary.
	Worn bearings	Check and replace if necessary.

MAINTENANCE CHARTS

This pressure washer was produced with the best available materials and quality craftsmanship. However, you as the owner have certain responsibilities for the correct care of the equipment. Attention to regular preventative maintenance procedures will assist in preserving the performance of your equipment. Contact your pressure washer dealer for maintenance. Regular preventative maintenance will add many hours to the life of your pressure washer. Perform maintenance more often under severe conditions.

MAINTENANCE SCHEDULE		
Replace Fuel Lines		Annually
Pump Oil	Inspect	Daily inspect the oil level
	Change	After first 50 hours, then every 500 hours or annually
Clean Burner Filter		Monthly (More often if fuel quality is poor)
Remove Burner Soot		Annually
Burner Adjustment/Cleaning		Annually
De-scale Coil		Annually (More often if required)
Replace High Pressure Nozzle		Every 6 months
Replace Quick Connects		Annually
Clean Water Screen/Filter		Weekly
Clean Float/Supply Tank		Every 6 months
Replace HP Hose		Annually if there is any sign of wear
Grease Motor		Every 10,000 hours
Replace Burner Nozzle		Annually
Replace Rupture Disc		Annually

OIL CHANGE RECORD

Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change	Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change

PREVENTATIVE MAINTENANCE

1. Use clean fuel — kerosene, No. 1 home heating fuel or diesel fuel. Clean or replace fuel filter every 100 hours of operation. Avoid water contaminated fuel as it will seize up the fuel pump. De-soot coils monthly. Use an additive if diesel is being used.
2. Check to see that the attached pressure washer water pump is properly lubricated.
3. Follow winterizing instructions to prevent freeze damage to pump and coils.
4. Always neutralize and flush detergent from system after use.
5. If water is known to be high in mineral content, use a water softener on your water system, or de-scale as needed.
6. Do not allow acidic, caustic or abrasive fluids to be pumped through the system.
7. Always use high grade quality cleaning products.
8. Never run attached pressure washer pump dry for extended periods of time.
9. If machine is operated with smoky or eye burning exhaust, coils will soot up, preventing water from reaching maximum operating temperature. (See section on Maintenance and Service).
10. Never allow water to be sprayed on or near the motor or burner assembly or any electrical component.
11. Delime coils as per instructions.

It is advisable, periodically, to visually inspect the burner. Check air inlet to make sure it is not clogged or blocked. Wipe off any oil spills and keep equipment clean and dry.

The areas around the pressure washer should be kept clean and free of combustible materials, gasoline and other flammable vapors and liquids.

The flow of ventilating air to the burner must not be blocked or obstructed in any manner.

MAINTENANCE AND SERVICE

Unloader Valves:

Unloader valves trap pressure in the line when a shut-off spray gun is closed. Machines with unloader valves are preset and tested at the factory before shipping. Occasional adjustment of the unloader may be necessary to maintain correct pressure.

Winterizing Procedure:

Damage due to freezing is not covered by warranty. Adhere to the following cold weather procedures whenever the washer must be stored or operated outdoors under freezing conditions.

During winter months, when temperatures drop below 32°F, protecting your machine against freezing is necessary. Store the machine in a heated room. If this is

not possible then mix a 50/50 solution of anti-freeze/ water or windshield washer fluid with water in a 5 gallon bucket. Place a short section of garden hose into the bucket and connect it to the machine. Elevate the bucket and turn the pump on to siphon the anti-freeze through the machine. If compressed air is available, an air fitting can be screwed into the inlet connector and by injecting compressed air, all water will be blown out of the system.

If you have an optional float tank, pour the antifreeze into this tank and run machine until antifreeze exits discharge nipple.

High Limit Hot Water Thermostat:

For safety, each machine is equipped with a high limit control switch. In the event the temperature of the water should exceed its operating temperature, the high limit control will turn the burner off until the water cools.

Pumps:

Use only SAE 30 weight non-detergent oil. Change oil after first 50 hours of use. Thereafter, change oil every three months or at 500 hour intervals. Oil level should be checked by using the dipstick found on the top of the pump or by the red dot visible through the oil gauge window. Oil should be maintained at that level.

Cleaning of Coils:

In alkaline water areas, lime deposits can accumulate rapidly inside the coil pipes. This growth is increased by the extreme heat build up in the coil. The best prevention for liming conditions is to use high quality cleaning detergents. In areas where alkaline water is an extreme problem, periodic use of deliming powder will remove lime and other deposits before coil becomes plugged.

Deliming Coils With A Pressure Washer:

Periodic flushing of coils is recommended.

Step 1 Fill a 5 gallon bucket with 4 gallons of water, then add 1 lb. of deliming powder. Mix thoroughly.

Step 2 Remove the high pressure nozzle from the pressure wand and put the wand into the bucket. Secure the trigger on the spray gun into the open position.

Step 3 Attach a short section (3-5 ft.) of garden hose to the attached pressure washer to siphon solution from the elevated bucket. Start up pressure washer, allowing solution to be pumped through pressure washer and into HPB coils and back into the bucket. Solution should be allowed to circulate 2-4 hours.

Step 4 After circulating solution flush entire system with fresh water.

MAINTENANCE

Removal of Soot In Heating Coil:

In the heating process, fuel residue in the form of soot deposits may develop between the heating coil pipe and block air flow which will affect burner combustion. When soot has been detected on visual observation, the soot on the coil must be washed off after coil has been removed using the following steps:

1. Remove the tank head assembly by unscrewing the three TEK screws and lifting the tank head off.
2. Remove the two pipe nipples and associated fittings.
3. Lift the coil out of the outer wrap.

CAUTION: The coil weighs about 80 lbs. Use proper lifting techniques.

4. Clean, repair and replace the coil by reversing the above steps.

Coil Reinstallation

Reinstall by reversing the above steps 4 through 1.

Rupture Disk

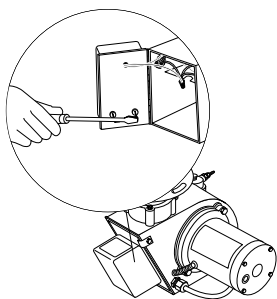
If pressure from pump or thermal expansion should exceed safe limits, the rupture disk will burst, allowing high pressure to be discharged through hose to ground. When the disk ruptures, it will need to be replaced.

Fuel:

Use clean fuel oil that is not contaminated with water and debris. Replace fuel filter and drain tank every 100 hours of operation. Use Kerosene No. 1 or No. 2 Heating Fuel (ASTM D306) or diesel only. **NEVER** use gasoline in your burner tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.

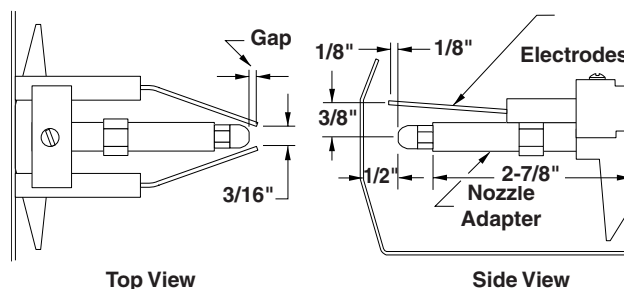
Ignition Circuit:

Periodically inspect wires, spring contact and electrodes for condition, security and proper spacing. **For transformer test (CAUTION 10,000 VOLTS)** use defect free insulated screwdriver and keep fingers off blade! Lay blade across one contact: OK if arc will span 1/2" between end of blade and other contact.



Electrode Setting - Wayne:

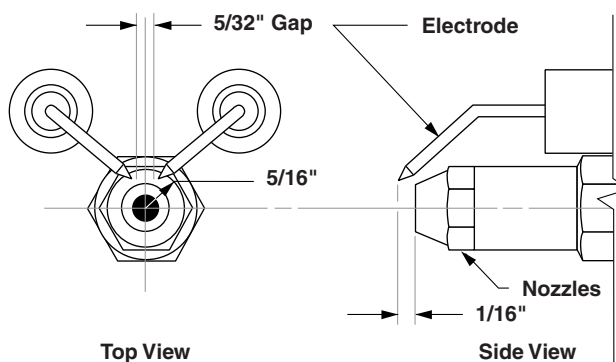
(See illustration below)



Electrodes Check: Periodically check wiring connections. If necessary to adjust electrodes, use diagram.

Electrode Setting - Beckett:

(See illustration below)



Electrodes Check: Periodically check wiring connections. If necessary to adjust electrodes, use diagram.

Burner Nozzle:

Keep the tip free of surface deposits by wiping it with a clean, solvent-saturated cloth, being careful not to plug or enlarge the nozzle. For maximum efficiency, replace the nozzle each season.

Fuel Control System:

This machine utilizes a fuel solenoid valve located on the fuel pump to control the flow of fuel to the combustion chamber. This solenoid is activated by a pressure switch located on the unloader valve. When an operator releases the trigger on the spray gun, the pressure drops, allowing the pressure switch to activate the fuel solenoid. The solenoid then closes, shutting off the supply of fuel to the combustion chamber. Controlling the flow of fuel in this way gives an instantaneous burn or no burn situation, thereby eliminating high and low water temperatures, and combustion smoke normally associated with machines incorporating a spray gun. Periodic inspection is recommended to insure that the fuel solenoid valve functions properly. This can be done by operating the machine and checking to see that when the trigger on the spray gun is in the off position, the burner is not firing.

MAINTENANCE

Fuel Pressure Adjustment:

To adjust fuel pressure, turn the adjusting screw with a standard screwdriver (located on the fuel pump) clockwise to increase, counterclockwise to decrease. Do not exceed 200 PSI.

Air Adjustment

Machines are preset and performance tested at the factory — elevation 100' above sea level. A one time correction for your location will pay off in economy, performance and extended service life. If a smoky or eye-burning exhaust is being emitted from the stack, two things should be checked.

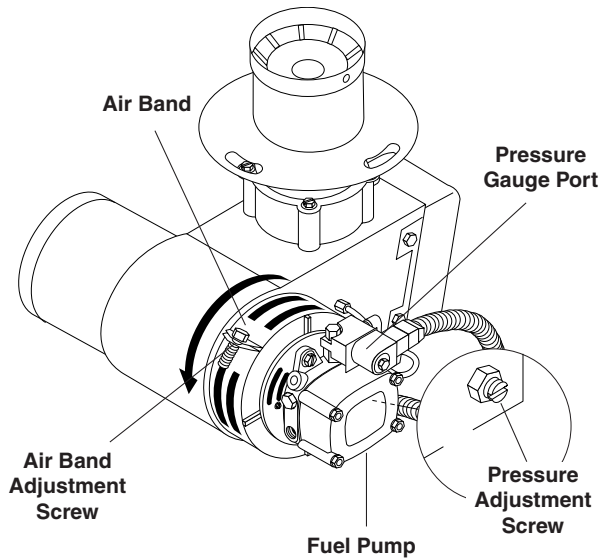
First, check the fuel to be certain that kerosene or No. 1 home heating fuel is being used.

Next, check the air adjustment on the burner. An oily, black, smoky fire indicates a lack of air and the air band should be moved to allow the air to flow through the burner. Sharp, eye-burning white fumes indicate too much air flowing through the combustion chamber. The air band should be moved to allow less air to flow through the burner.

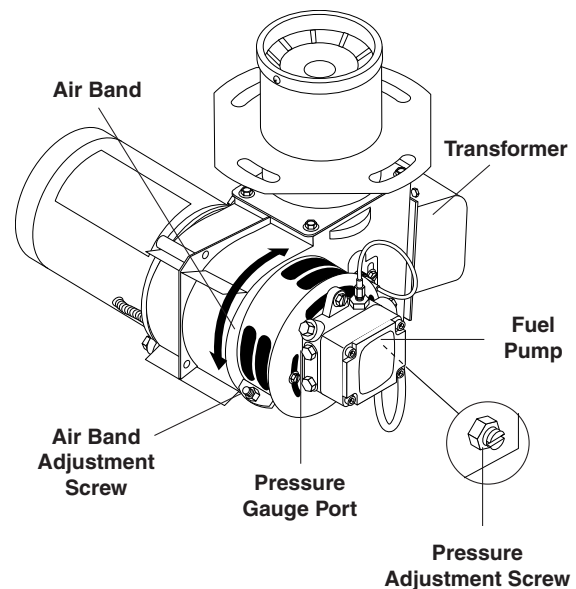
To adjust: start machine and turn burner ON. Loosen the two locking screws found in the air shutter openings (refer to illustrations) and close air shutter until black smoke appears from burner exhaust vent. Note air band position. Next, slowly open the air shutter until white smoke just starts to appear. Turn air shutter halfway back to the black smoke position previously noted. Tighten locking screws.

If the desired position cannot be obtained using only the air shutter, lock the air shutter in as close a position as can be obtained, then repeat the above procedure on the air band setting.

FUEL AIR ADJUSTMENT: WAYNE



FUEL AIR ADJUSTMENT: BECKETT





EXPLODED VIEW - 2011 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	10-02025A	Label, Hot/Caliente w/Arrows Warning	1
2	95-07290029	Tank Head Assy	1
3	7-014832	Insulation, Top Head	1
4	90-50045	Clip, Retaining U-Type	4
5	2-0115090	Tank, Fuel 6 Gal Blank	1
6	4-02100000	Hose, 1/4", Push-On	12"
7	11-013	Label, Logo, Large	1
8	90-19710	Screw, 1/4" x 3/4" HH NC, Whiz Loc	4
9	7-01482	Insulation, Bottom	1
10	95-07102253	Coil Wrap	1
11	4-02110000	Hose, 1/2" Push-On	30"
12	2-0008	Nipple, 1/2" Hex Steel	1
13	7-01487	Insulation, Blanket	1
14	2-1019	Elbow, 3/8" Female	1
15	10-09004	Label, Hot Water Outlet	1
16	2-3409	Disk, Rupture Assy, 7000 PSI	1
17	2-1108	Hose Barb, 1/2" Barb x 3/8" MPT, Push-On	1
18	2-1085	Hose Barb, 1/4" Barb x 1/4" ML Pipe	2
19	2-9040	Clamp, Hose, UNI .46-.54	7
20	2-2007	Nipple, 3/8" x 3/8" NPT ST Male	1
21	90-2020	Nut, 3/8" x 12 Gauge	4
22	2-99031	Filter, Diesel, Disposable	1
23	90-2022	Nut, Cage, 1/4" x 16 Gauge	4
24	95-07102247	Fuel Strap, Long	2
25	90-1996	Screw, 3/8" x 3/4" HH NC, Whiz Loc	2
26	10-020110	Label, Use Only Kerosene	1
27	2-011576	Cap, Non-Vented, Plastic	1
28	11-1043	Label, Warning, Pictorial	1
29	2-01041	Pad, Soft Rubber, 50 DURO	2
30	95-07102248	Fuel Strap, Short	2
31	2-30057	Valve, 1/4" Shut-Off	1
32	2-010061	Bushing, Rubber, Nitrile	3
33	2-00601	Elbow, 1/2" JIC, 3/8" Fem, 90°	1
34	4-02047732	Hose, 3/8" x 32", 2 Wire, Pressure Loop	1
35	6-01041	Cord, Service, SEO, 12/3, Coleman	33"
36	10-99078	Label, Motor Overload Reset, Lexan	1

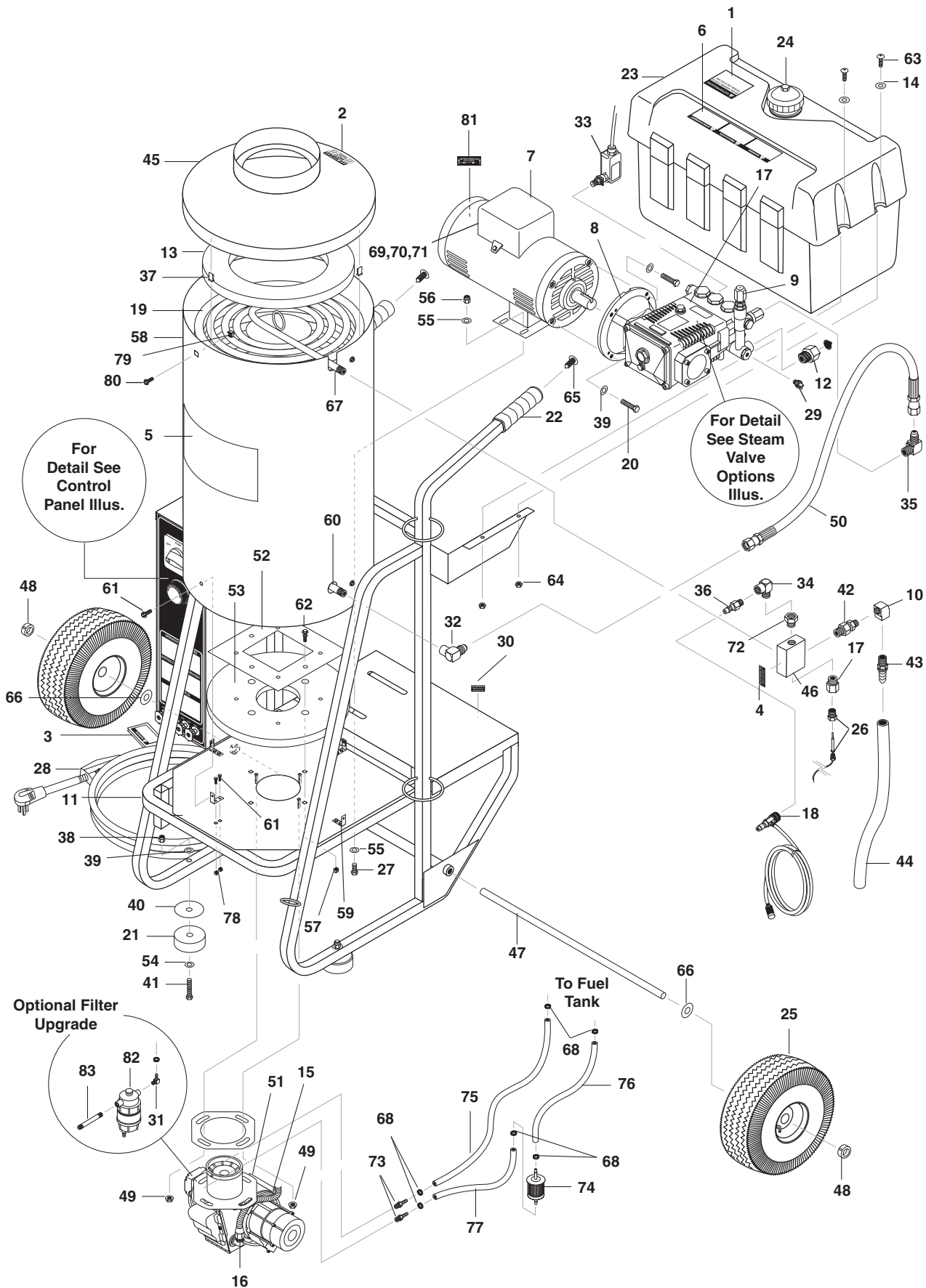
ITEM	PART NO.	DESCRIPTION	QTY
37	Please See Specifications Pages		
38	2-300812	Pump Protector, 1/4" PTP	1
39	6-021720	Switch, Pressure N/O, 1/4" NPT SS	1
40	Please See Specifications Pages		
41	2-0053	Elbow, 1/2" JIC x 3/8"	1
42	2-10942	Swivel, 1/2" MP x 3/4" GHF, w/Strainer	1
43	4-02100000	Hose, 1/4" Push-On	6"
44	Please See Specifications Pages		
45	90-1016	Bolt, 3/8" x 1", NC HH	4
46	2-10866	Hose Barb, 1/4" x 3/8" Double	1
47	90-1006	Bolt, 5/16" x 3/4" NC GR 5 CS ZN	8
48	90-4001	Washer, 5/16", Flat, SAE	12
49	10-09003	Label, Cold Water Inlet, HS	1
50	2-0155	Fastener, Ratchet, Black Nylon	2
51	2-01103	Grip, 1" Sqr, Handle	2
52	2-00742	Adapter, 1/2" x 1/2" Pipe	1
53	95-07102218	Assy, Frame	1
54	90-40125	Washer, 3/8" x 1"	2
55	90-20012	Nut, Whiz Loc 5/16	4
56	4-02100000	Hose, 1/4" Push-On	21"
57	95-07102311	Axle, 5/8" x 22"	1
58	Please See Specifications Pages		
59	90-4015	Washer, 7/16" x 2-1/2", Zinc, PG Foot	2
60	90-4005	Washer, 5/8", Flat, SAE	2
61	6-01060	GFCI, 120V 20A, w/36' 12-3 Cord	1
62	10-08018	Label, Warning, Service Cord	1
63	4-02100000	Hose, 1/4" Push-On	6"
64	6-0516	Relief, Strain, 1/2" Metal	1
65	90-4002	Washer, 3/8", SAE, Flat	10
66	90-10201	Bolt, 3/8" x 2-1/4", HH, Grade .5	2
67	90-20040	Nut, 3/8", Flange Whiz Loc, NC	6
68	6-01011	Cord, Service 16/4	5 ft.
69	90-19960	Screw, 3/8" x 1-1/4"	4
70	95-07290053	Retainer, Burner Insulation	1
71	4-0303	Wheel & Tire Assy, 4" Steel Rim w/Tube	2
72	90-20041	Collar, 5/8" Bore Shaft	2

EXPLODED VIEW - 2011 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
73	2-010066	Elbow, Fuel Tank, Zinc	1
74	90-2001	Nut, 5/16" ESNA, NC	4
75	95-07102217	Assy, Power Platform, Mini	1
76	95-07101226	Block, Discharge, Brass 1/2" x 1/2"	1
77	90-2002	Nut, 3/8", ESNA, NC	6
78	6-05152	Strain Relief, LQ Tite, Small	1
	6-05181A	▲ Locknut, 1/2"	1
79	95-07102310	Assy, Coil	1
80	2-0006	Nipple, 3/8" Hex	1
81	4-02100000	Hose, 1/4" Push On (28")	1
82	6-01011	Cord, Service, SEO 16-4	5 ft
83	4-05088	Kit, Thermostat, Adj. 302°F	1

ITEM	PART NO.	DESCRIPTION	QTY
84	35-156	Fuel Filter Upgrade Option (Items 84-86)	
	2-99050	Filter, Fuel Oil, H ₂ O	1
85	2-0013451	Nipple, 1/4" x 3" Black Pipe	1
86	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	1
87	2-0031	Elbow, 3/8" STL, Street	1
88	2-00681	Bushing, 1/2" x 3/8"	1
89	2-00742	Adapter, 1/2" x 1/2" Pipe	1
		▲ Not Shown	

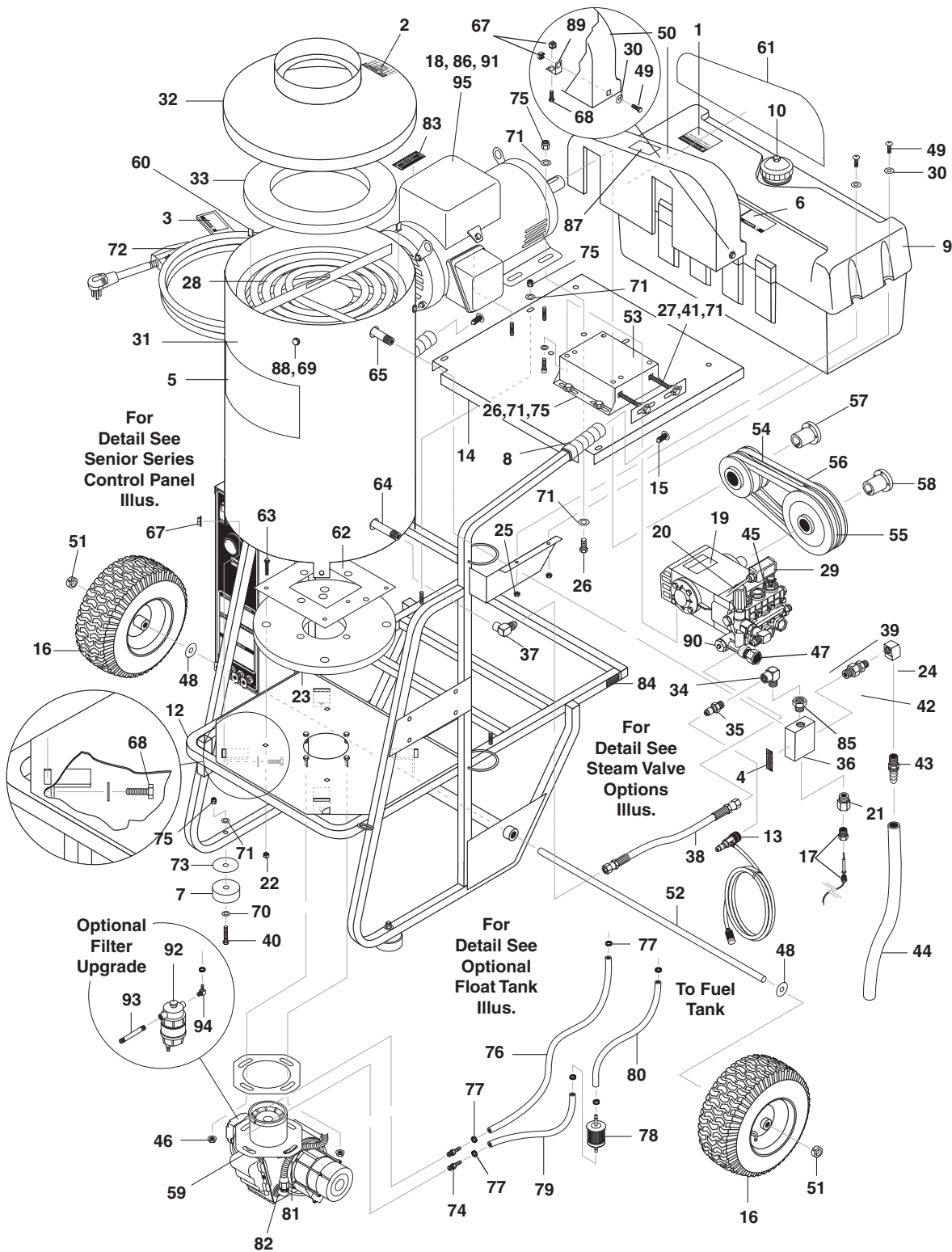
EXPLODED VIEW - 3520



3520 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	10-020110	Label, Use Only Kerosene	1	42	2-3409	Disk, Rupture Assy, 7000 PSI	1
2	10-02025A	Label, "Hot/Caliente" with Arrows Warning	1	43	2-1108	Hose Barb, 1/2" Barb x 3/8" MPT, Push-On	1
3	10-08018	Label, Warn, Service Cord	1	44	4-02110000	Hose, 1/2", Push-On	2.5 ft.
4	10-09004	Label, Hot Water Outlet	1	45	95-07290029	Tank Head Assy. 16" x 8"	1
5	11-013	Label, Logo Large (HPB)	1	46	95-07101226	Block, 1/2" x 1/2", Discharge	1
6	11-0101	Label, Warning (Lexan)	1	47	95-07102205	Axle, 5/8" x 25.710"	1
7	Please See Specifications Pages			48	90-20041	Collar, 5/8"	2
8	Please See Specifications Pages			49	90-20040	Nut, 3/8" Flange, Whiz Loc	4
9	Please See Specifications Pages			50	4-02047729	Hose, 3/8" x 29"	1
10	2-1019	Elbow, 3/8" Female	1	51	Please See Specifications Pages		
11	95-07102242	Frame, Junior	1	52	95-07290053	Retainer, Burner Insulation	1
12	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1	53	7-01482	Insulation, Tank Bottom, 1" Blanket	1
13	7-014832	Tank Head Insul.	1	54	90-40125	Washer, 3/8" x 1"	2
14	90-40001	Washer, 1/4"	4	55	90-4001	Washer, 5/16", Flat	8
15	6-0128	Conduit, 25"	1	56	90-2001	Nut, 5/16", ESNA	4
16	6-051591	Connector 1/2" L/T 90° Black	1	57	90-2020	Nut, Cage, 3/8" x 12 GA	4
17	2-00742	Adapter, 1/2" x 1/2" Pipe	1	58	95-07200129	Wrap, Outer Coil, Red (3520)	1
18	4-011184	Downstream Injector Assy, Non-Adj #3 (3520)	1	59	95-07290007	Tab, Outer Wrap	4
19	95-07121218	Coil, Heating, Jr.	1	60	2-00091	Nipple, 1/2" x 3", Galv.	1
20	90-1016	Bolt, 3/8" x 1"	4	61	90-19711	Screw, 1/4" x 1/2", Whiz Loc	12
21	2-01041	Pad, Soft Rubber, 50 Duro	2	62	90-19960	Screw, 3/8" x 1-1/4" Whiz Loc	4
22	2-01103	Grip, 1" SQR, Handle	2	63	90-19980	Screw, 1/4" x 1"	4
23	2-011506	Tank Fuel, 9 Gallon Poly, Black	1	64	90-200012	Nut, 1/4" Flange	4
24	2-01167	Cap, Fuel Tank Plastic H60-AV	1	65	2-0155	Fastener, Ratchet, Black Nylon	2
25	4-0303	Wheel & Tire, 4" Steel Rim w/Tube	2	66	90-4005	Washer, 5/8" Flat	2
26	4-05088	Adjustable Thermostat	1	67	2-00101	Nipple, 1/2" x 4", Galv.	1
27	90-1006	Bolt, 5/16" x 3/4"	4	68	2-9040	Clamp, Hose UNI .46-.54	6
28	6-01059	GFCI, 240V 1PH 30A w/36' 10-3 Cord (3520)	1	69	6-051595	▲ Relief, Strain, LQ Tite(3520)	1
29	2-300812	Pump Protector, 1/4"	1	70	6-05181B	▲ Lock-Nut, 3/4"	1
30	10-09003	Label, Cold Water Inlet HS	1	71	6-0108	▲ Cord, Service, 10/3(3520)	44"
31	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	1	72	2-00681	Bushing, 1/2" x 3/8"	1
32	2-00602	Elbow, 1/2" JIC x 1/2" FM	1	73	2-1085	Hose Barb	2
33	6-021720	Pressure Switch, 1/4"	1	74	2-99031	Fuel Filter	1
34	2-0031	Elbow, 3/8" Street	1	75	4-02100000	Fuel Line, 1/4" Push-On	28"
35	2-0053	Elbow, 1/2" JIC, 3/8", 90°	1	76	4-02100000	Fuel Line, 1/4" Push-On	21"
36	2-2007	Coupler Plug, 3/8" Male	1	77	4-02100000	Fuel Line, 1/4" Push-On	6"
37	90-50045	Clip, Retainer	4	78	90-20231	Nut, Cage, 1/4" x 12 Gauge	8
38	90-2002	Nut, 3/8" ESNA	2	79	90-2022	Nut, Cage, 1/4" x 16 Gauge	5
39	90-4002	Washer, 3/8" Flat	6	80	90-19710	Screw 1/4" x 3/4" HH NC Whiz Loc	5
40	90-4015	Washer, 3/8" x 2-1/2"	2	81	10-99078	Label, Motor Overload Reset	1
41	90-10201	Bolt, 3/8" x 2-1/4"	2	82	35-156	Fuel Filter Upgrade Option (Items 82-84)	
					2-99050	Filter, Fuel/Oil/H ₂ O	1
				83	2-0013451	Nipple, 1/4" x 3"	1

EXPLODED VIEW - 3530, 4020



3530, 4020 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	10-020110	Label, Use Only Kerosene	1
2	10-02025A	Label, "Hot/Caliente" with Arrows Warning	1
3	10-08018	Label, Warning, Service Cord	1
4	10-09004	Label, Hot Water Outlet	1
5	11-013	Label, Logo, Large (HPB)	1
6	11-0101	Label, Warning (Lexan)	1
7	2-01041	Pad, Soft Rubber, 50 Duro	2
8	2-01103	Grip, 1" SQR, Handle	2
9	2-011506	Tank, Fuel, 9 Gallon Poly, Black	1
10	2-01167	Cap, Fuel Tank, Plastic H60-AV	1
11	2-30082	Pump Protector, 1/2" PTP	1
12	95-07102241	Frame	1
13	4-011184	Downstream Injector Assy., Non Adj. #3	1
14	95-07102243	Power Platform (4020)	1
	95-07102245	Power Platform, Large (3530)	1
15	2-0155	Fastener, Ratchet Blk Nylon	2
16	4-0307	Wheel & Tire, 6" Steel Rim	2
17	4-05088	Thermostat, General 302°	1
18	Please See Specifications Pages		
19	Please See Specifications Pages		
20	Please See Specifications Pages		
21	2-00742	Adapter, 1/2" x 1/2"	1
22	90-2020	Nut, Cage, 3/8" x 12 Gauge	4
23	7-014865	Insulation Blanket, 18" OD x 4.5" ID	1
24	2-1019	Elbow, 3/8" Female	1
25	90-200012	Nut, 1/4", Flange	4
26	90-1016	Bolt, 3/8" x 1" (3530)	6
		(4020)	8
27	90-10220	Bolt, 3/8" x 3-1/2", TAP	2
28	95-07164054	Coil 18"	1
	7-01433	▲ Insulation Blanket	1
29	6-021720	Pressure Switch, 1/4"	1
30	90-40001	Washer, 1/4"	7
31	95-071640531	Outer Wrap, 18" Coil (HPB)	1
32	95-07163088	Wrap, Burner, Top	18"
33	7-014866	Insulation Disk	1
34	2-0031	Elbow, 3/8" Street	1
35	2-2007	Nipple, 3/8"	1
36	95-07101226	Discharge Block, 1/2" x 1/2"	1
37	2-00602	Elbow, 1/2" JIC x 1/2" FEM	1

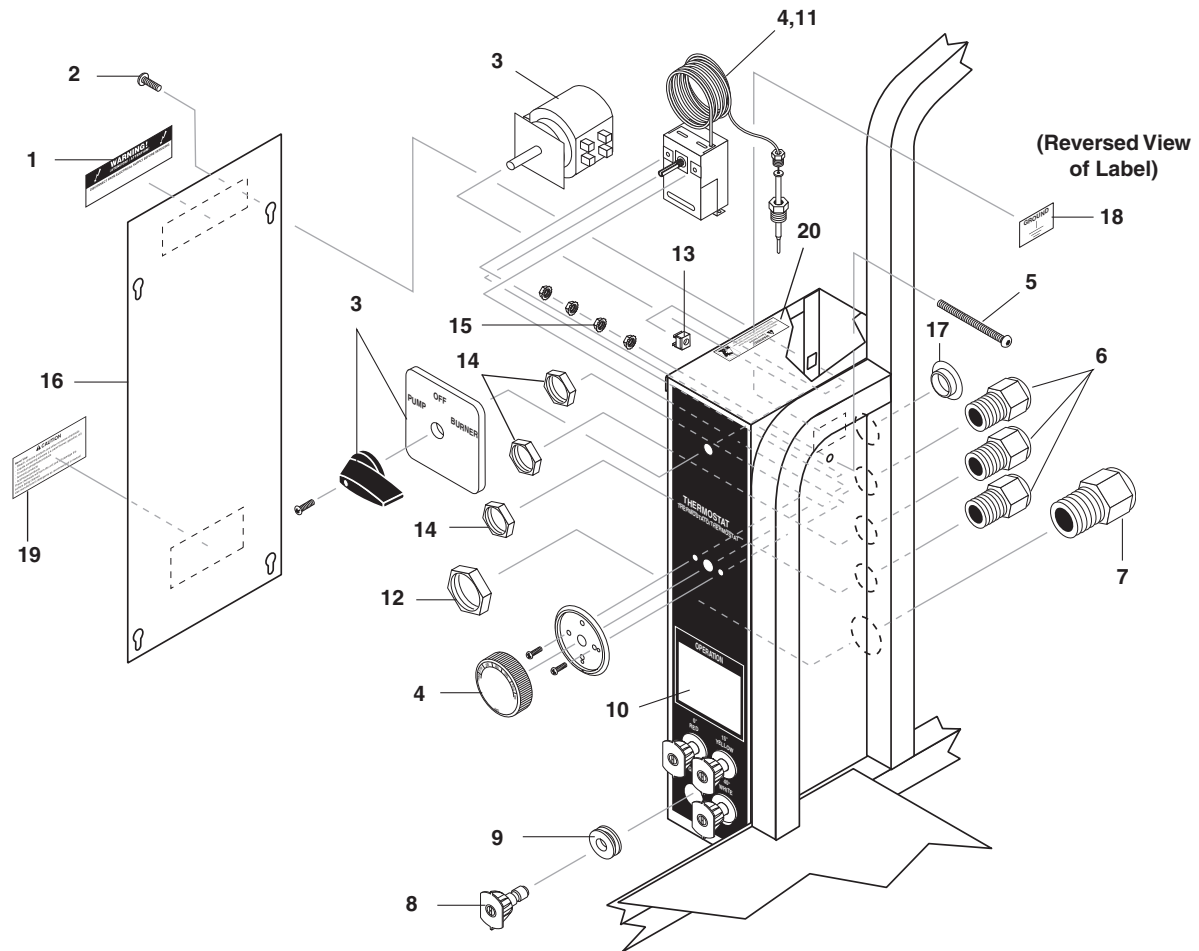
ITEM	PART NO.	DESCRIPTION	QTY
38	4-02047722	Hose, 3/8" x 22"	1
39	2-0053	Elbow, 1/2" JIC x 3/8", 90°	1
40	90-10201	Bolt, 3/8" x 2-1/4"	1
41	90-2007	Nut, 3/8" Hex	2
42	2-3409	Rupture Disk Assy, 7000 PSI	1
43	2-1108	Hose Barb, 1/2" Barb x 3/8" MPT, Push-On	1
44	4-02110000	Hose, 1/2" Push-On	2.5 ft.
45	70-460146	Cap, Valve w/1/4" Port	1
46	90-20040	Nut, 3/8" Flange, Whiz Loc	4
47	2-10942	Swivel, 1/2", GHF	1
48	90-4005	Washer, 5/8" Flat	2
49	90-19980	Screw, 1/4" x 1"	7
50	2-011724	Belt Guard	1
51	90-20041	Collar, 5/8"	2
52	95-07102215	Axle, SR	1
53	95-07102244	Pump Rail	1
54	Please See Specifications Pages		
55	Please See Specifications Pages		
56	Please See Specifications Pages		
57	Please See Specifications Pages		
58	Please See Specifications Pages		
59	Please See Specifications Pages		
60	90-50045	Clip, Retainer	4
61	11-3229	Label, Belt Guard (HPB)	1
62	95-07290053	Retainer, Burner Insulation	1
63	90-19960	Screw, 3/8" x 1-1/4" Whiz Loc	4
64	2-00091	Nipple, 1/2" x 3", Galv.	1
65	2-00101	Nipple, 1/2" x 4", Galv.	1
66	90-20012	Nut Whiz, 5/16" Flange	4
67	90-20231	Nut, Cage, 1/4" x 12 GA	6
68	90-19711	Screw, 1/4" x 1/2", Whiz Loc	3
69	90-19708	Screw, 1/4" x 1-1/4", Whiz Loc	4
70	90-40125	Washer, 3/8" x 1"	2
71	90-4002	Washer, 3/8", Flat (3530)	23
		(4020)	25
72	6-01059	GFCI, 230V, 30 Amp (4020)	1
	6-010690	GFCI, 240V, 40 Amp (3530)	1
73	90-4015	Washer, 7/16" x 2-1/2"	2
74	2-1085	Hose Barb, 1/4"	2
75	90-2002	Nut, 3/8", ESNA	13
76	4-02100000	Fuel Line, 1/4"	28"

3530, 4020 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
77	2-9040	Clamp, Hose UNI .46-.54	6
78	2-99031	Filter, Fuel	1
79	4-02100000	Fuel Line, 1/4" Push-On	21"
80	4-02100000	Fuel Line, 1/4" Push-On	6"
81	6-0128	Conduit, Water Tite	25"
82	6-051591	Connector 1/2" L/T 90° Black	1
83	10-99078	Label, Motor Overload Reset (4020)	1
84	10-09003	Label, Cold Water Inlet	1
85	2-00681	Bushing, 1/2" x 3/8"	1
86	6-05181B	▲ Locknut, 3/4" (4020)	1
	6-05182	▲ Locknut, 1" (3530)	1
87	10-02028	Label, Warning Exposed Pulleys	1
88	90-2022	Nut, Cage 1/4" x 16 Gauge	4
89	95-07102101	Tab, Belt Guard Mount	3

ITEM	PART NO.	DESCRIPTION	QTY
90	2-1044	Plug, 1/8" Countersunk	1
91	6-0108	▲ Cord, Service 10/3 (4020) 44"	
	6-0102	▲ Cord, Service 8/3 (3530) 44"	
92	35-156	Fuel Filter Upgrade Option (Items 92-94)	
	2-99050	Filter, Fuel/Oil/H ₂ O	1
93	2-0013451	Nipple, 1/4" x 3"	1
94	2-1089	Hose Barb, 1/4" Barb, 1/4" Pipe, 90°	1
95	6-051595	▲ Strain Relief, 3/4" (4020)	1
	6-051700	▲ Strain Relief, 1" (3530)	1
96	90-1006	Bolt, 5/16" x 3/4"	4
97	90-4001	Washer, 5/16" Flat	4
		▲ Not Shown	

CONTROL PANEL - 2011

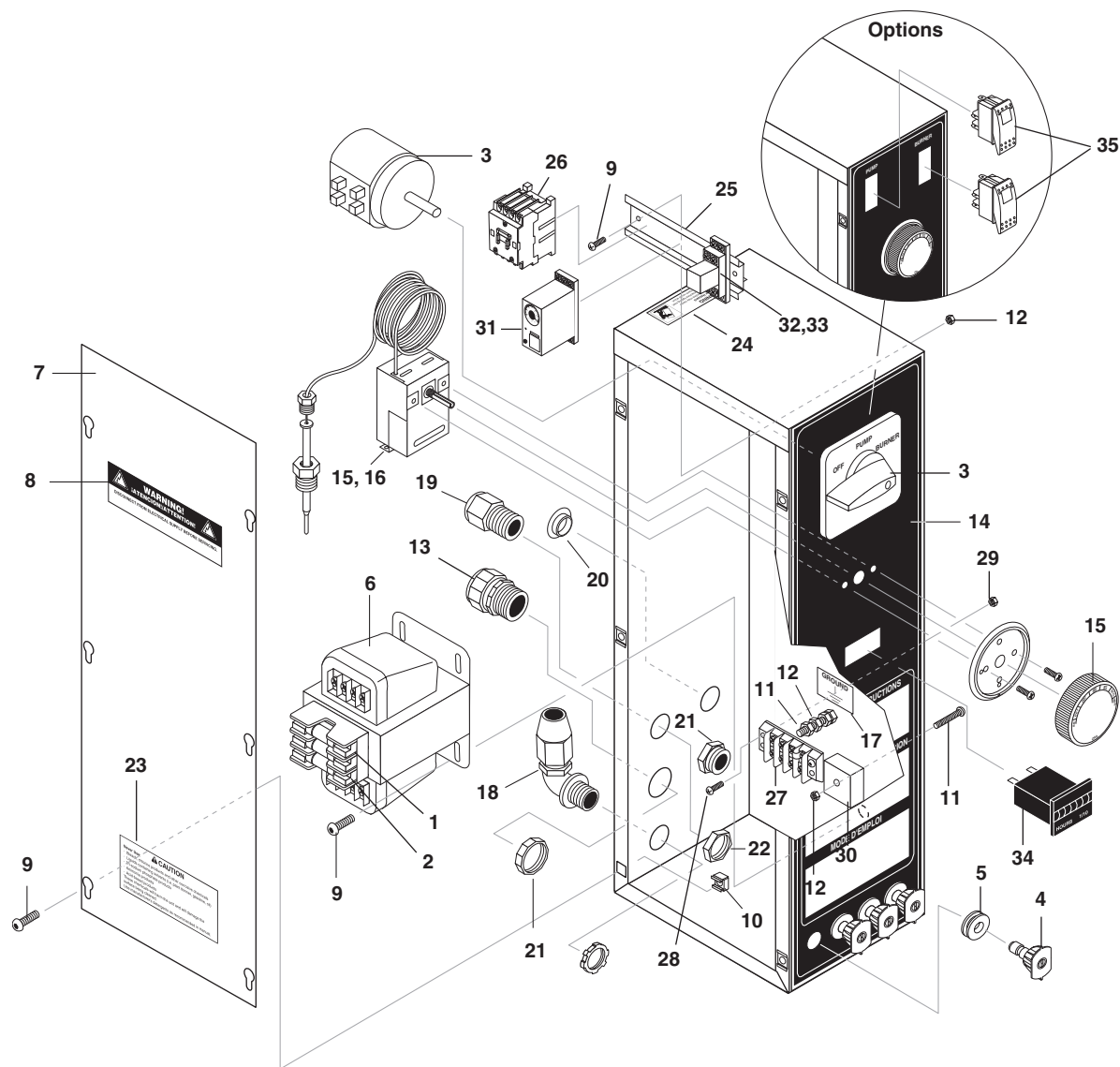


2011 CONTROL PANEL PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	10-08021	Label, Disc. Power Supply	1	9	2-0103	Grommet, Rubber, Nozzle Holder	4
2	90-1991	Screw, 10/32" x 1/2" NHSOC, Black	4	10	11-0318	Label, Control Panel, Mini	1
3	6-020201	Switch, 3 PS, 115V-230V, 1PH	1	11	6-01270	▲ Conduit, 1/4" Split	36"
4	4-05088	Thermostat, Adjustable, 302°F	1	12	6-05181B	Locknut, 3/4" 8465	1
5	90-1994	Screw, 10/32" x 1-1/4" RH, SL, Blk	1	13	9-2018	Nut, Cage, 10/32" x 16 GA	4
6	6-05152	Strain Relief, STRT, LQ TITE 3231, Small	3	14	6-05181A	Locknut, 1/2" 8463	3
7	6-051532	Strain Relief, STRT, LQ TITE w/Gasket	1	15	90-017	Nut, 10/32" Keps	4
8	4-12804000	Nozzle, SAQCMEG 0004, Red	1	16	95-07102246	Electric Box Cover, Mini	1
	4-12804015	Nozzle, SAQCMEG 1504, Yellow	1	17	2-01403	Bushing, Snap, 5/8"	1
	4-12804025	Nozzle, SAQCMEG 2504, Green	1	18	11-1042	Label, Ground	1
	4-12804040	Nozzle, SAQCMEG 4004, White	1	19	9.800-049.0	Label, Cleaning Solution	1
				20	9.800-018.0	Label, Tip Over Hazard	1

▲ Not Shown

CONTROL PANEL - 3520



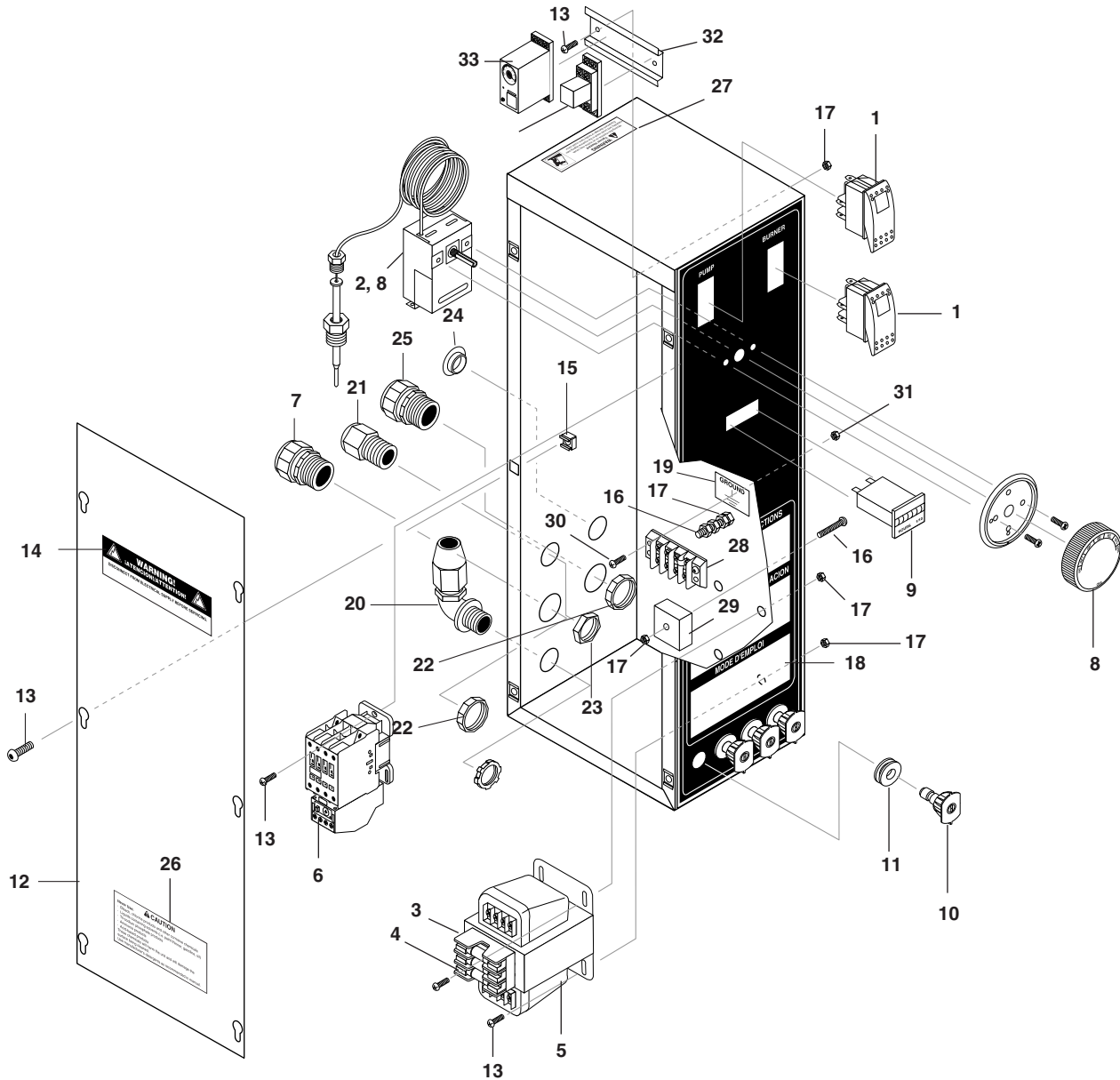
3520 CONTROL PANEL PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1		Fuse, Please See Specifications Pages		8	10-08021	Label, Disconnect Power	1
2		Fuse, Please See Specifications Pages		9	90-1991	Screw, 10/32" x 1/2" (Auto Start/Stop, Time Delay Options)	10
3	6-020201	Switch, 3 PS, 115V-230V, 1 PH Salzer	1	10	90-2018	Nut, Cage, 10/32" x 16 Ga.	6
4	4-12805000	Nozzle, SAQCMEG 0005, Red (3520)	1	11	90-1994	Screw, 10/32" x 1-1/4" (Auto Start/Stop Option)	1
	4-12805015	Nozzle, SAQCMEG 1505, Yellow (3520)	1	12	90-017	Nut, 10/32" Keps (Time Delay Option) (Auto Start/Stop)	9
4	4-12805025	Nozzle, SAQCMEG 2505, Green (3520)	1				2
	4-12805040	Nozzle, SAQCMEG 4005, White (3520)	1	13	6-051595	Strain Relief, STRT, L/T, LG (3520)	2
5	2-0103	Grommet, Rubber	4		6-051532	Strain Relief w/Gasket (2015)	1
6		Transformer, Please See Specifications Pages		14	11-0305	Label, Control Panel (HPB)	1
7	95-07102240	Cover, Electrical Box	1		11-0304	Label, Control Panel (HPB) (Time Delay Option, Auto Start/Stop Option)	1

3520 CONTROL PANEL PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
15	4-05088	Adj. Thermostat, Adj. 302° F	1	29	90-200490	Nut, 8/32" Keps (Time Delay Option, Auto Start/Stop Option)	2
16	6-01270	▲ 1/4" Split Conduit	4 ft.	30	6-036880	Timer, Solid State 120V 5-60 Mins., Adj. (Auto Start/Stop Option)	1
17	11-1042	Label, Ground	1	31	6-03700	Timer, Multi-Function 24V-120/240V (Time Delay Option)	1
18	6-051591	Connector, 1/2", L/T 90°	1	32	6-03541	Base, Relay (Time Delay Option)	1
19	6-05152	Strain Relief, STRT, L/T, Sm	1	33	6-03621	Relay, 120V (Time Delay Option)	1
20	2-01403	Bushing, Snap 5/8"	1	34	4-050822	Meter, Hour (Optional)	1
21	6-05181B	Locknut, 3/4"	2	35	6-020240	Switch, Rocker, Carling, Green (Auto Start/Stop Option) (Time Delay Option)	2 1
22	6-05181A	Locknut, 1/2"	1		6-020241	Switch, Rocker, Red (Time Delay Option)	1
23	9.800-049.0	Label, Cleaning Solution	1			▲ Not Shown	
24	9.800-018.0	Label, Tip Over Hazard	1				
25	6-021595	Rail, Din (Time Delay Option)6" (Auto Start/Stop Option)	4"				
26	6-4013	Contactor, 120V CH CE15FNS3AB (Time Delay Option, Auto Start/Stop Option)	1				
27	6-0504	Block, Terminal, 4 Pole (Time Delay Option, Auto Start/Stop Option)	1				
28	90-16	Screw, 8/32" x 3/4" (Time Delay Option, Auto Start/Stop Option)	2				

CONTROL PANEL - 3530, 4020



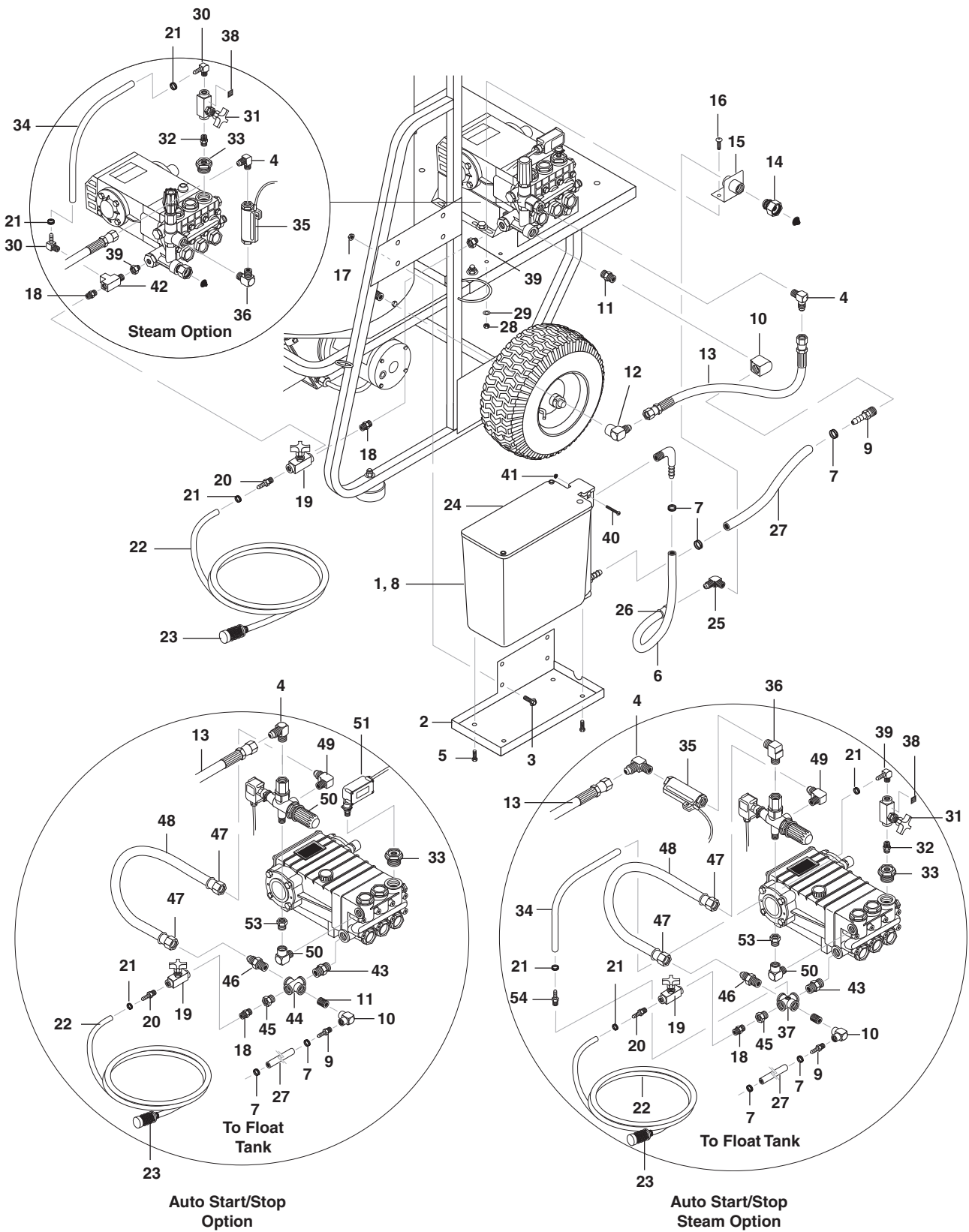
3530, 4020 CONTROL PANEL PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	6-020240	Switch, Rocker, Carling w/Green Lens (Time Delay Option)	2	7	6-051595	Strain Relief, STRT, L/T, (4020) LG	1
	6-020241	Switch, Rocker, Red (Time Delay Option)	1		6-05170	Strain Relief, 3/4" Watertight (3530)	1
2	6-01270	▲ Conduit, 1/4" Split	4 ft.	8	4-05088	Thermostat, General 302°	1
3		Fuse, Please See Specifications Pages		9	4-050822	Hour Meter (Optional)	1
4		Fuse, Please See Specifications Pages		10	4-12805500	Nozzle, SAQCMEG 0055, Red (4020)	1
5		Transformer, Please See Specifications Pages			4-12805515	Nozzle, SAQCMEG 1505.5, Yellow (4020)	1
6		Contactor Overload, Please See Spec's Pages			4-12805525	Nozzle, SAQCMEG 2505.5, Green (4020)	1
					4-12805540	Nozzle, SAQCMEG 4005.5, White (4020)	1

3530, 4020 CONTROL PANEL PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10	4-12804000	Nozzle, SAQCMEG 0004 Red (3530)	1	23	6-05181A	Locknut, 1/2"	1
	4-12804015	Nozzle SAQCMEG 1504 Yellow (3530)	1	24	2-01403	Bushing, Snap 5/8"	1
	4-12804025	Nozzle, SAQCMEG 2504 Green (3530)	1	25	6-051595	Strain Relief, STRT, L/T, LG	1
	4-12804040	Nozzle, SAQCMEG 4004 White (3530)	1	26	9.800-049.0	Label, Cleaning Solution	1
11	2-0103	Grommet, Rubber, Nozzle Holder	4	27	9.800-018.0	Label, Tip Over Hazard	1
12	95-07102240	Cover, Elec Box	1	28	6-0504	Block, Terminal, 4 Pole (Time Delay Option, Auto Start/Stop Option)	1
13	90-1991	Screw, 10/32" x 1/2" (Time Delay Option)	13 2	29	6-036880	Timer, Solid State, 120V, 5-60 Mins Adj. (Auto Start/Stop Option)	1
14	10-08021	Label, Disconnect Power Supply	1	30	90-16	Screw, 8/32" x 3/4" (Time Delay Option, Auto Start/Stop Option)	2
15	90-2018	Nut, Cage, 10/32" x 16 ga.	6	31	90-200490	Nut, 8/32" Keps (Time Delay Option, Auto Start/Stop Option)	2
16	90-1994	Screw, 10/32" x 1-1/4" (Auto Start/Stop Option)	1 1	32	6-021595	Rail, Din (Time Delay Option) 2"	
17	90-017	Nut, 10/32" Keps (Time Delay Option)	12 2	33	6-03700	Timer, Multi-Function (Time Delay Option)	1
		(Auto Stop/Start Options)	1	34	6-03541	Base, Relay (Time Delay Option)	1
18	11-0304	Label, Control Panel (HPB)	1	35	6-03621	Relay, 120V (Time Delay Option)	1
19	11-1042	Label, Ground	1			▲ Not Shown	
20	6-051591	Connector, 1/2", L/T 90°, Blk	1				
21	6-05152	Strain Relief, STRT, L/T, Sm	1				
22	6-05181B	Locknut, 3/4" (4020) (3530)	2 1				
	6-05172	Locknut, 3/4" Conduit (3530)	1				

FLOAT TANK OPTION - 3530, 4020



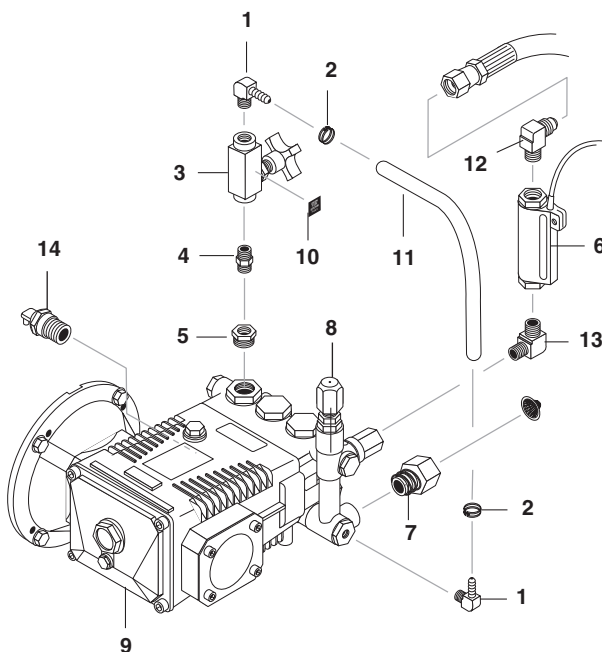
3530, 4020 FLOAT TANK OPTION PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2-011641	Tank, Float	1	30	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
2	95-071022137	Shelf, Float Tank	1	31	2-30151	Valve, Flow Control w/Metering	1
3	90-1996	Screw, 3/8" x 3/4" HH NC, Whiz Loc	4	32	2-0004	Nipple, 1/4" Hex Steel	1
4	2-0053	Elbow, 1/2" JIC x 3/8" Fem, 90°	1	33	70-460146	Cap, Valve with 1/4" Gauge Port	1
5	90-19712	Screw, 5/16" x 1/2" Whiz Lock	4	34	4-02100000	Hose, 1/4", Push-on	14 in
6	4-02110000	Hose, 1/2", Push-On	20 in	35	6-021730	Flow Switch	1
7	2-9002	Clamp, Screw, #6	3	36	2-00270	Elbow, 3/8" Male Pipe	1
8	2-30122	▲ Valve, Float	1	37	2-10352	Cross, 1/2" Female w/1/8 Hole	1
	2-01021	▲ Ball Float	1	38	10-99011	Label, Open For Steam	1
9	2-10861	Hose Barb, 5/8" Barb x 1/2" ML Pipe	1	39	2-11031	Adapter, 1/4"x 1/8"	1
10	2-1020	Elbow, 1/2" Female, Brass	1	40	90-199400	Screw, 10/32" x 2-1/2"	1
11	2-10067	Modified Close Nipple, 1/2" NPT, 5/16"	1	41	90-017	Nut, 10/32" Keps	1
12	2-00602	Elbow, 1/2" x 1/2" Fem, 90°	1	42	2-1040	Tee, 1/4" Street	1
13	4-02047722	Hose, 3/8" x 22", 2 Wire, Pressure Loop	1	43	2-1007	Nipple, 1/2" Hex	1
14	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1	44	2-1035	Cross, 1/2" Female	1
15	95-07162007	Hose Connection Bracket	1	45	2-1076	Bushing, 1/2" x 1/4"	1
16	90-1001	Bolt, 1/4" x 3/4", NC HH	2	46	2-1053	Nipple, 1/2" JIC x 1/2" Pipe	1
17	90-20040	Nut, 3/8", Flange, Whiz Loc, NC	4	47	2-1105	Swivel, 1/2" JIC Female Push-on	2
18	2-1003	Nipple, 1/4" Hex	1	48	4-02110000	Hose, 1/2" Push-on	16"
19	2-3015	Valve, Flow Control	1	49	2-1060	Elbow, 1/2 JIC x 3/8" 90°	1
20	2-1085	Hose Barb, 1/4" Barb x 1/4" ML Pipe	1	50	5-3027	Unloader VB8 w/Switch	1
21	2-9040	Clamp, Hose, UNI, .46-.54 (Float Tank w/Steam)	3	51	6-021720	Switch, Pressure 1/4 Port	1
22	4-02080000	Tube, 1/4" x 1/2", Clear Vinyl	6 ft.	52	2-0031	Elbow, 3/8" Street	1
23	2-1905	Strainer, 1/4" Brass w/Check Valve	1	53	2-0074	Adapter, 3/8" x 3/8" Street	1
24	2-011642	Cover, Float Tank, Portotenica	1	54	2-1084	Hose Barb, 1/4 Barb x 1/8" Pipe	1
25	2-1062	Elbow, 1/2" JIC x 1/2", 90°	1			▲ Not Shown	
26	2-1105	Swivel, 1/2" JIC Fem, Push-On	1				
27	4-02110003	Hose, 5/8" Push-On	12 in				
28	90-2000	Nut, 1/4", ESNA, NC	2				
29	90-4000	Washer, 1/4" Flat, SAE	4				

STEAM OPTIONS & PARTS LISTS

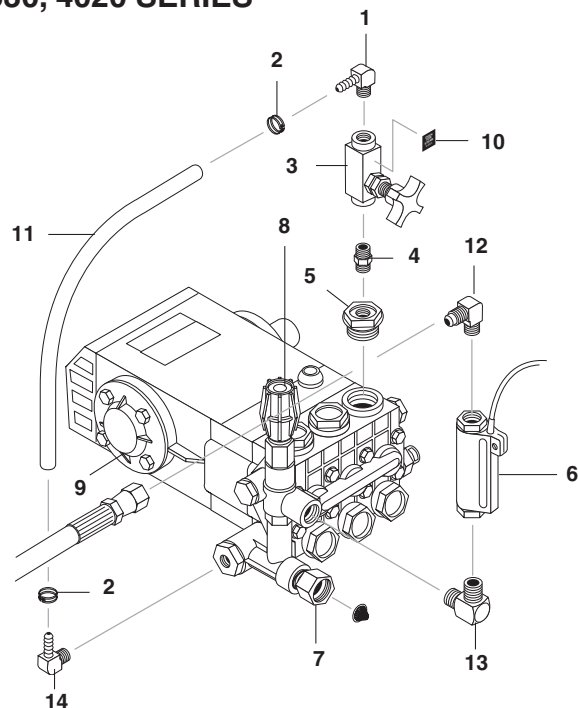
ITEM	PART NO.	DESCRIPTION	QTY
1	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
2	2-9040	Clamp, Hose, UNI .46-.54	2
3	2-30151	Valve, Flow Control w/Metering	1
4	2-0004	Nipple, 1/4" Hex Steel	1
5	70-460148	Cap, Valve with 1/4" Gauge Port	1
6	6-021730	Switch, Flow, MV-60	1
7	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
8	Unloader , Please See Specifications Pages		
9	Pump , Please See Specifications Pages		
10	10-99011	Label, Open For Steam	1
11	4-02100000	Hose, 1/4" Push-On	14"
12	2-0053	Elbow, 1/2" JIC x 3/8"	1
13	2-00270	Elbow, 3/8" Male Pipe	1
14	2-30082	Pump Protector, 1/2"	1

3520 SERIES



ITEM	PART NO.	DESCRIPTION	QTY
1	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	1
2	2-9040	Clamp, Hose, UNI .46-.54	2
3	2-30151	Valve, Flow Control w/Metering	1
4	2-0004	Nipple, 1/4" Hex Steel	1
5	70-460146	Cap, Valve with 1/4" Ga. Port	1
6	6-021730	Switch, Flow, MV-60	1
7	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
8	Unloader , Please See Specifications Pages		
9	Pump , Please See Specifications Pages		
10	10-99011	Label, Open For Steam	1
11	4-02100000	Hose, 1/4" Push-On	14"
12	2-0053	Elbow, 1/2" JIC x 3/8"	1
13	2-00270	Elbow, 3/8" Male Pipe	1
14	2-1088	Hose Barb, 1/4" Barb x 1/8" Pipe	1

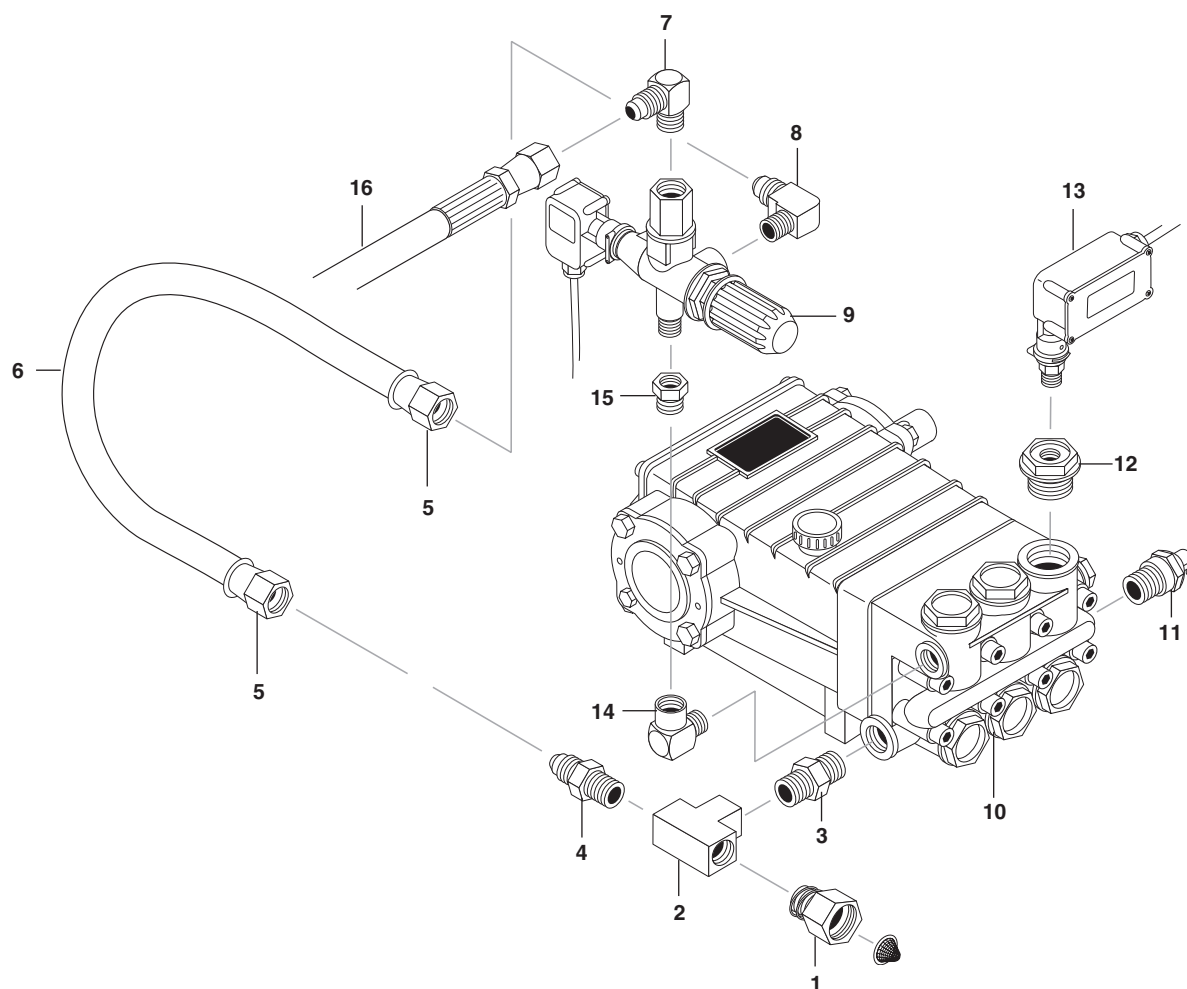
3530, 4020 SERIES





ITEM	PART NO.	DESCRIPTION	QTY
8	2-1060	Elbow, 1/2" JIC x 3/8"	1
9	5-3027	Unloader, VB8 w/Switch	1
10	Pump, Please See Specifications Pages		
11	2-30082	Pump Protector, 1/2"	1
12	6-021720	Switch, Pressure 1/4" NPT	1
13	2-0031	Elbow, 3/8" Street	1
14	2-0074	Adapter, 3/8" x 3/8" Street	1
15	4-02047729	Hose, 3/8" x 29", Pressure Loop	1

AUTO START/STOP OPTIONS - 3530, 4020

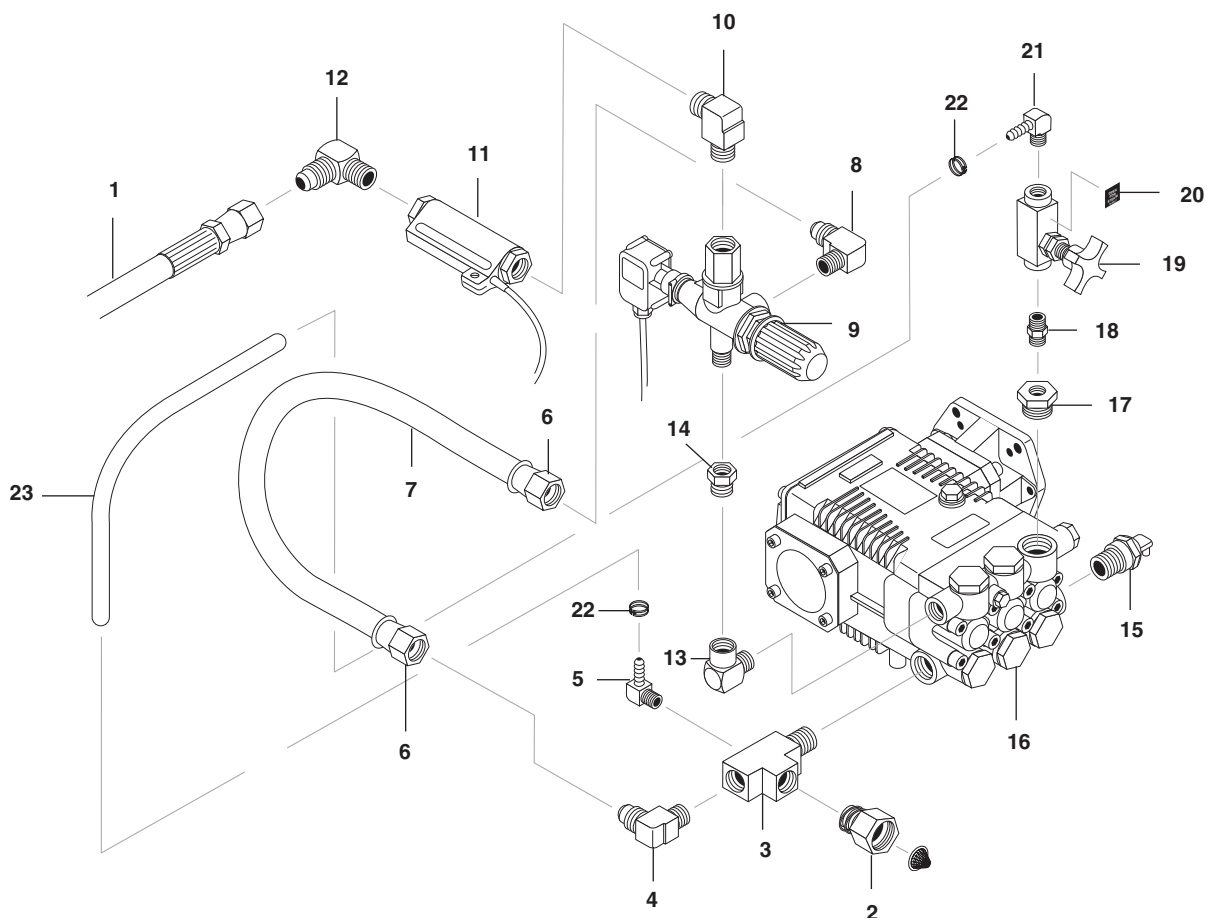


AUTO START/STOP OPTIONS - 3530, 4020 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	2-10942	Swivel, 1/2" MP x 3/4 GHF w/Strainer	1
2	2-1032	Tee, 1/2 Female Pipe	1
3	2-1007	Nipple, 1/2" Hex	1
4	2-1053	Nipple, 1/2" JIC x 1/2" MPT Pipe	1
5	2-1105	Swivel, 1/2" JIC Fem Push-on2	
6	4-02110000	Hose, 1/2" Push-on	16 in
7	2-0053	Elbow, 1/2 JIC, 3/8"	1

ITEM	PART NO.	DESCRIPTION	QTY
8	2-1060	Elbow, 1/2" JIC, 3/8"	1
9	5-3027	Unloader, VB8 w/Switch	1
10	Pump, Please See Specifications Pages		
11	2-30082	Pump Protector, 1/2"	1
12	70-460146	Cap, Valve with 1/4" Ga Port	1
13	6-021720	Switch, Pressure 1/4" NPT	1
14	2-0031	Elbow, 3/8" Street	1
15	2-0074	Adapter, 3/8" x 3/8" Street	1
16	4-02047722	Hose, 3/8" x 22", Pressure Loop	1

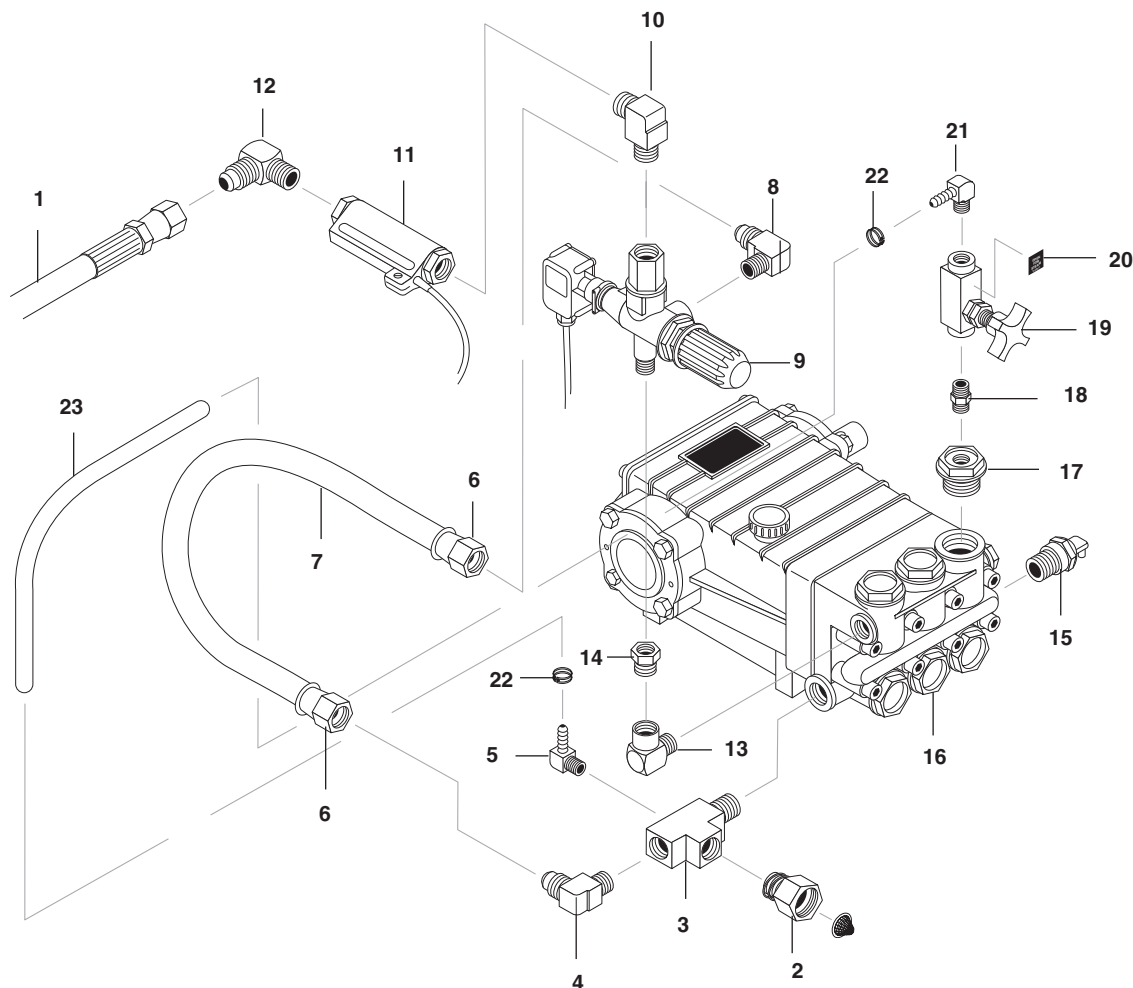
AUTO START/STOP STEAM OPTIONS - 3520



AUTO START/STOP STEAM OPTIONS - 3520 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4-02047717	Hose, 3/8" x 18" Pressure Loop	1	12	2-0053	Elbow, 1/2 JIC, 3/8"	1
2	2-10942	Swivel, 1/2 x 3/4 GHF w/Strainer	1	13	2-0031	Elbow, 3/8" Street	1
3	2-10421	Tee, 1/2" w/1/8" Hole Street	1	14	2-0074	Adapter, 3/8" x 3/8" Steel	1
4	2-1062	Elbow, 1/2" JIC x 1/2 - 90°	1	15	2-30082	Pump Protector 1/2"	1
5	2-1088	Hose Barb, 1/4 Barb x 1/8" Pipe 90°	1	16	Pump, Please See Specifications Pages		
6	2-1105	Swivel, 1/2" JIC Fem, Push-on 2		17	70-460148	Cap, Valve w/1/4" Ga. Port	1
7	4-02110000	Hose, 1/2" Push-on	16 in	18	2-0004	Nipple, 1/4" Hex Steel	1
8	2-1060	Elbow, 1/2 JIC x 3/8" 90°	1	19	2-30151	Valve, Flow Control w/Metering	1
9	5-3027	Unloader, VB8 w/Switch	1	20	10-99011	Label, Open for Steam	1
10	2-00270	Elbow, 3/8" Male Pipe	1	21	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe	1
11	6-021730	Switch, Flow	1	22	2-9040	Clamp, Hose	2
				23	4-02100000	Hose, 1/4" Push-on	14 in.

AUTO START/STOP STEAM OPTIONS - 3530, 4020

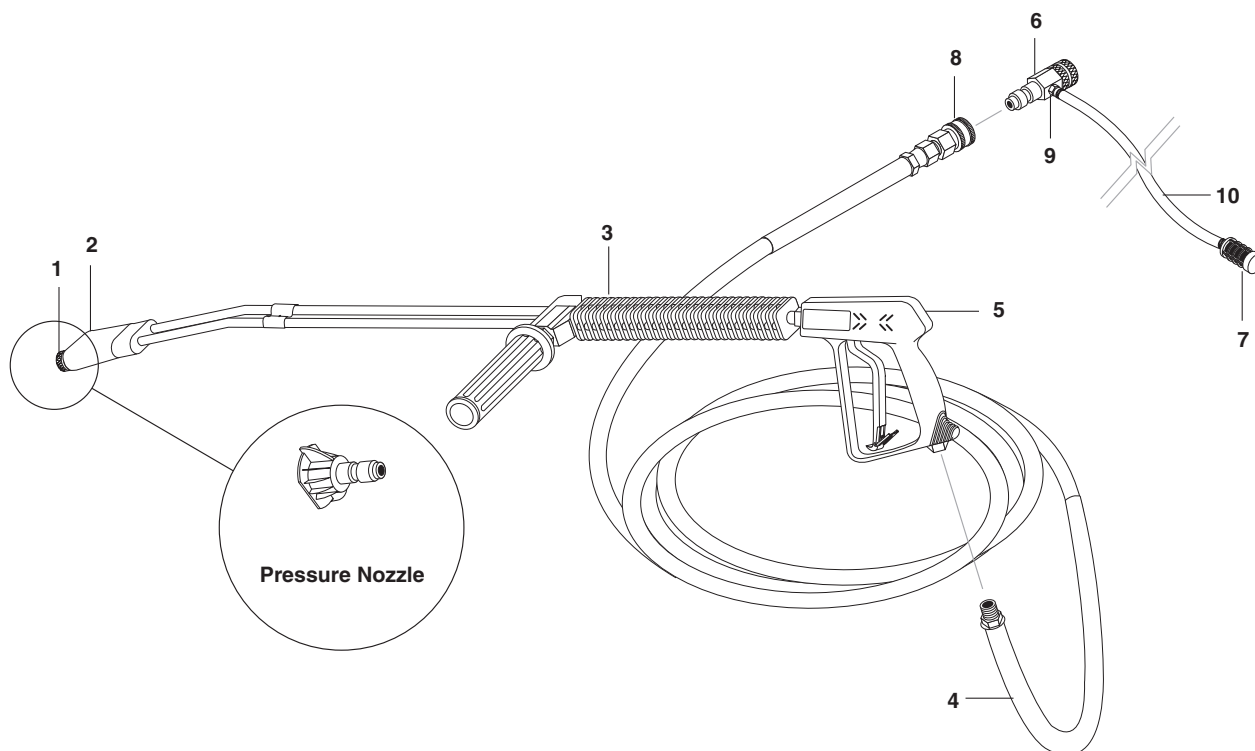


AUTO START/STOP STEAM OPTIONS - 3530, 4020 PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	4-02047722	Hose, 3/8" x 22" Pressure Loop	1
2	2-10942	Swivel, 1/2 x 3/4 GH w/Strainer	1
3	2-10421	Tee, 1/2" w/1/8" Hole Street	1
4	2-1062	Elbow, 1/2" JIC x 1/2 - 90°	1
5	2-1088	Hose Barb, 1/4 Barb x 1/8" Pipe 90°	1
6	2-1105	Swivel, 1/2" JIC Fem, Push-on	2
7	4-02110000	Hose, 1/2" Push-on	16 in
8	2-1060	Elbow, 1/2 JIC x 3/8" 90°	1
9	5-3027	Unloader, VB8 w/Switch	1
10	2-00270	Elbow, 3/8" Male Pipe	1
11	6-021730	Switch, Flow	1

ITEM	PART NO.	DESCRIPTION	QTY
12	2-0053	Elbow, 1/2 JIC, 3/8"	1
13	2-0031	Elbow, 3/8" Street	1
14	2-0074	Adapter, 3/8" x 3/8" Steel	1
15	2-30082	Pump Protector 1/2"	1
16	Pump, Please See Specifications Pages		
17	70-460146	Cap, Valve w/1/4" Ga. Port	1
18	2-0004	Nipple, 1/4" Hex Steel	1
19	2-30151	Valve, Flow Control w/Metering	1
20	10-99011	Label, Open for Steam	1
21	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe	1
22	2-9040	Clamp, Hose	2
23	4-02100000	Hose, 1/4" Push-on	14 in.

HOSE & SPRAY GUN ASSEMBLY



HOSE & SPRAY GUN ASSEMBLY PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2-2001	Coupler, 1/4" Male	1	7	2-1904	Strainer, 1/4" Hose Barb	1
	2-0119	▲ Quick Coupler O-Ring, Small	1		8	Coupler, 3/8" Female	1
2	4-06540	▲ Nozzle Only, 1/8" Soap	1	8	2-2002	Coupler, 3/8" Female	1
3	4-0111341A	Wand, Zinc, VP, w/Coupler	1		2-0121	▲ Quick Coupler, O-Ring, Large	1
	83-SSVPKIT	▲ Repair Kit, Wand, SS Seat	1	9	2-9040	Clamp, Hose, UNI .46-.54	2
4	4-02093450BC	Hose, 50' x 3/8", 1 Wire, Blue w/Coupler (HPB)	1	10	4-02080000	Tube, 1/4" x 1/2" Clear Vinyl	6 ft.
5	4-01246	Spray Gun, Shut-off, AP-10001				▲ Not Shown	
6	4-011184	Detergent Injector, Non Adjust #3 (3520, 3530, 4020)	1				
	4-011183	Detergent Injector, Non Adjust #2 (2011)	1				

SPECIFICATIONS

PARTS SPECIFICATIONS:

PUMP								MOTOR			
Pump		Pump		Pulley		Bushing		Motor		Motor	
Machine #	Unloader	Part #	Unloader	Pulley	Part #	Bushing	Part #	Size	Voltage	Part #	Pulley
2011(HPB)	SE2020F	5-1400	5-3329	NA	NA	NA	NA	1.5 HP	120v/1ph/60Hz	5-1046	NA
3520(HPB)	SE3525F	5-1405	5-3329	NA	NA	NA	NA	5 HP	230v/1ph/60Hz	5-1053	NA
4020(HPB)	SM-4035	5-1420	5-3029	2AK74H	5-40207401	24 MM	5-512024	6 HP	230v/1ph/60Hz	5-10401	2AK54H
3530(HPB)	SM-4035	5-1420	5-3029	2BK80H	5-40508001	24 MM	5-512024	7.5 HP	230v/1ph/60Hz	5-1013	2BK52H

SPECIFICATIONS

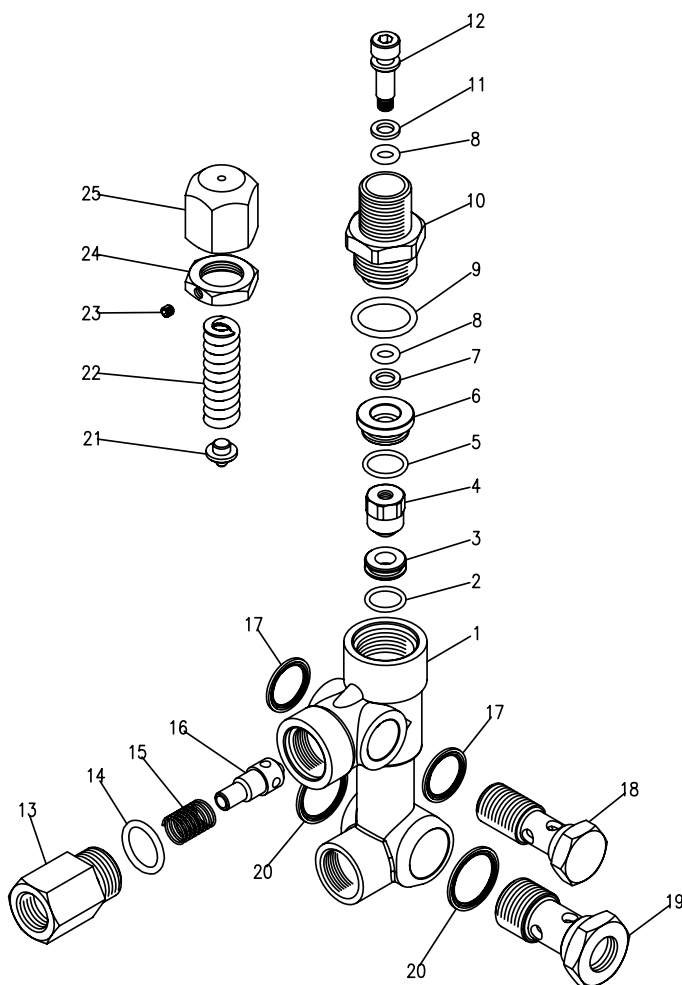
MOTOR						CONTROLS				
Model (Con't)	Pulley Part #	Bushing Part #	Belt Size	Belt Part #	Motor Contactor	Overload	Stepdown Transformer	Primary FusePart#	SecondPart FusePart#	
2011(HPB)	NA	NA	NA	NA	NA	NA	NA	NA	N/A	
3520(HPB)	NA	NA	NA	NA	NA	NA	6-60101	6-022946	022970	
4020(HPB)	5-40205401	Hx1-1/8"	5-511113AX	34 (2)	5-602034	6-4018	NA	6-60101	6-022946	022970
3530(HPB)	5-40505201	Hx1-3/8"	5-511138BX	36 (2)	5-604036	6-4018	6-5015	6-60101	6-022946	022970

SPECIFICATIONS

Model #	Burner Assy #	Fuel Nozzle	Transformer	Burner Motor	Fuel Pump/ Solenoid/Cord	Fuel Solenoid Coil	Electrode
2011 (Mini)	7-00027	7-01244	7-23581	7-21805U	7-21844U	7-21755U	7-578727
3520	7-00090	7-0101	7-514021	7-21174	7-21844U	7-21755U	7-578727
3530	7-00090	7-0101	7-514021	7-21174	7-21844U	7-21755U	7-578727
4020	7-00090	7-0101	7-514021	7-21174	7-21844U	7-21755U	7-578727

VBA35 UNLOADER EXPLODED VIEW

#5-3329 6.6 GPM@3500 PSI



VBA35 UNLOADER EXPLODED VIEW PARTS LIST

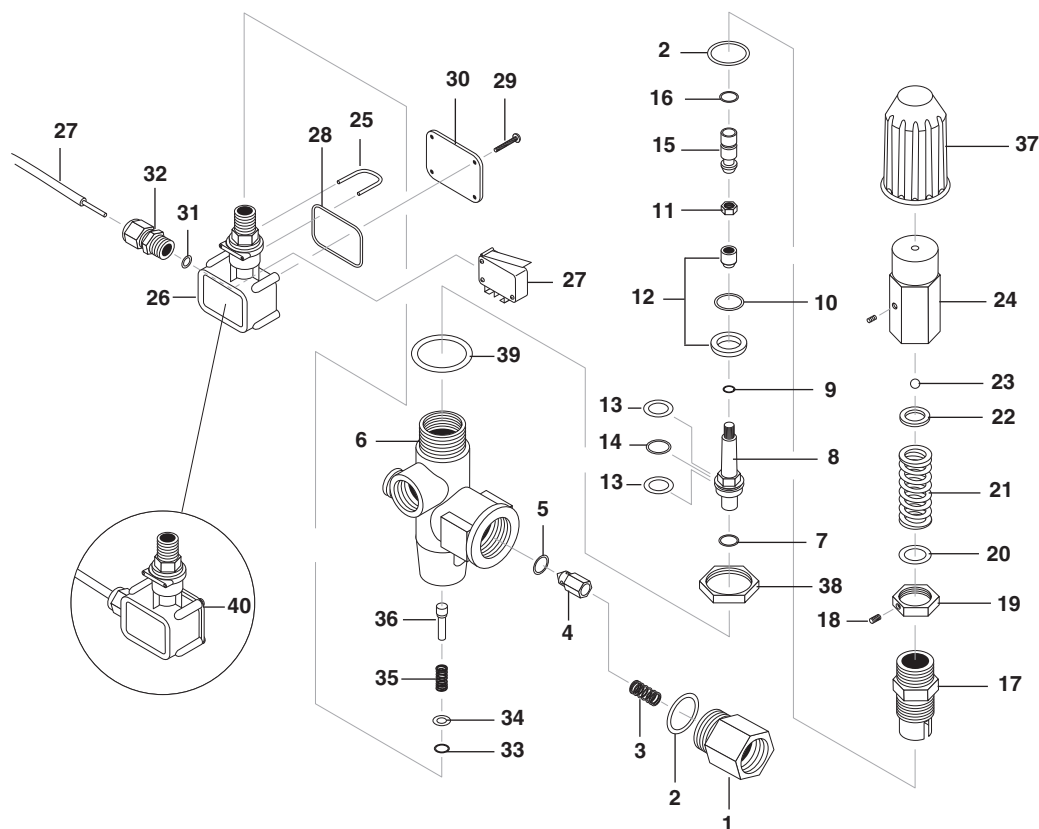
ITEM	PART #	DESCRIPTION	KIT	QTY	ITEM	PART #	DESCRIPTION	KIT	QTY
1	70-020444	Body Valve		1	16	70-110207	Poppet	B	1
	70-020452	Body Valve		1	17	70-140802	Seal Washer 3/8		2
2	70-060141	O-Ring	A, C	1	18	70-180004	Hollow Bolt, 3/8		1
3	70-150316	Seat	C	1	19	70-180008	Hollow Bolt 1/2		1
4	70-450401	Ball, Sub-assy	C	1	20	70-140803	Seal Washer 1/2		2
5	70-060114	O-Ring	A	1	21	70-120212	Plate	C	1
6	70-010111	Guide Bushing		1	22	70-090037	Spring	C	1
7	70-000919	Teflon Ring	A	1	23	70-180304	Set Screw		1
8	70-060170	O-Ring	A	2	24	70-030209	Nut		1
9	70-060162	O-Ring	A	1	25	70-090520	Brass Handle		1
10	70-140734	Connector		1					
11	70-000918	Teflon Ring	A	1					
12	70-120611	Stem	C	1					
13	70-140702	Connector, Female		1					
14	70-060119	O-Ring	A, B	1					
15	70-090004	Spring	B	1					

Kit A 70-262813 O-Ring Repair Kit

Kit B 70-262814 Outlet Kit

Kit C 70-262815 Stem Repair Kit

VB8 UNLOADER VALVE EXPLODED VIEW



VB8 UNLOADER VALVE EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	60.0058.31	3/8 Bsp F Outlet Fitting	1
2	10.3070.02*	O-ring 1.78 x 18.77 mm	2
3	60.0053.51	Spring	1
4	60.0052.31	Check Valve	1
5	10.3213.00*	O-ring 3 x 6 mm	1
6	60.1201.35	VB8 Brass Body	1
7	10.3170.08*	O-Ring 2,.62 x 7.6 mm	1
8	60.1206.31	Piston	1
9	10.3001.01*	O-ring 1 x 4 mm	1
10	10.3066.01*	O-ring 1.78 x 15.6 mm	1
11	60.1205.31	M 6 Nut	1
12	60.2221.20*	VB8/9 Seat+Shutter	1
13	10.4021.00*	Back Ring 11.4 x 15.9 mm	2
14	10.3175.00*	O-ring 2.62 x 10.77 mm	1
15	60.1204.31	Spring Guide	1
16	10.3167.01*	O-ring 2.62 x 5.23 mm	1
17	60.1203.31	Piston Housing	1
18	16.2100.00	M 4 x 4 mm Dowel	1
19	60.1704.31	M 22 Nut	1
20	14.3719.00	Washer 9 x 15 mm	1
21	60.1208.61	3.2 x 33 mm Spring	1

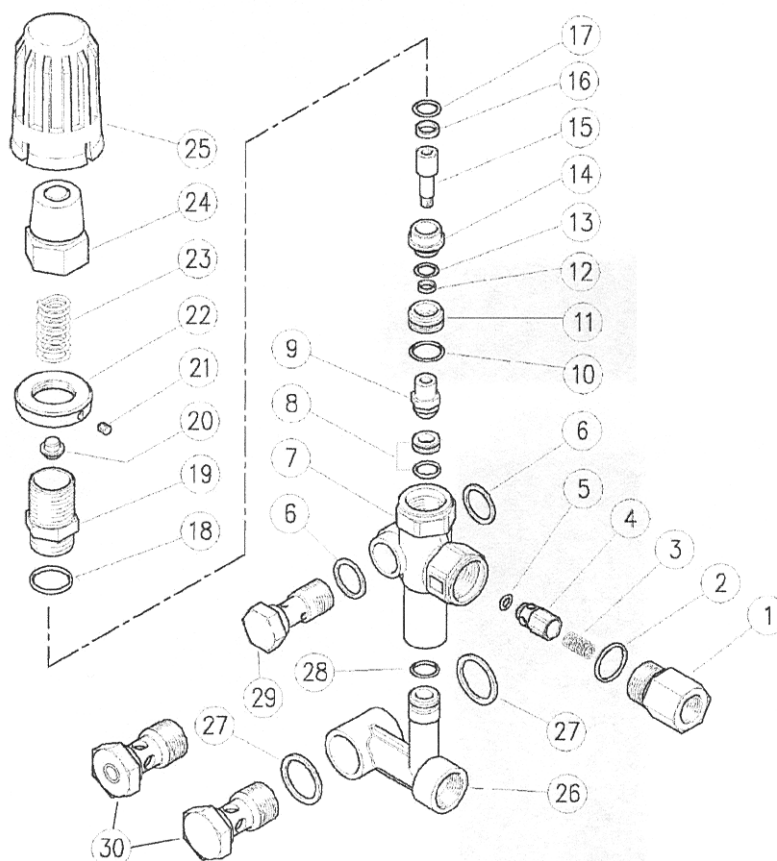
ITEM	PART NO.	DESCRIPTION	QTY
22	60.1210.31	Upper Frame	1
23	14.7421.00	1/4" Ball	1
24	60.1209.31	Brass Cap	1
25	29.0087.51	Sst Clip	1
26	29.0089.84	Plastic Housing	1
27	12.5006.00	El.Cable + Micro Switch	1
28	10.3206.01	O-ring 2.62 x 28.25 mm	1
29	16.3020.00	2.5 x 12 mm screw	2
30	29.0088.84	Cover	1
31	10.3169.00	O-ring 2.62 x 6.02 mm	1
32	29.0082.84	Black Nut-40 Bar	1
33	10.3038.00	O-ring 1.78 x 3.68 mm	1
34	14.3519.53	Sst Washer 4 x 8 mm	1
35	60.2303.51	Spring	1
36	60.1281.31	PR 5 Pin	1
37	60.1202.84	Plastic Handle (60.1290.00)	1
38	14.3582.00	Washer D. 30 mm (60.1290.00)	1
39	60.2254.31	M 30 Nut (60.1290.00)	1
40	29.0096.24	PR 5 Pl.Housing Kit	1

Kit P/N Description

*K1 60.1212.24 VB8 Spare Parts Kit 9x1 pcs 1

VB55 UNLOADER EXPLODED VIEW

5-3029 Unloader PA 8 gpm @ 3650 psi



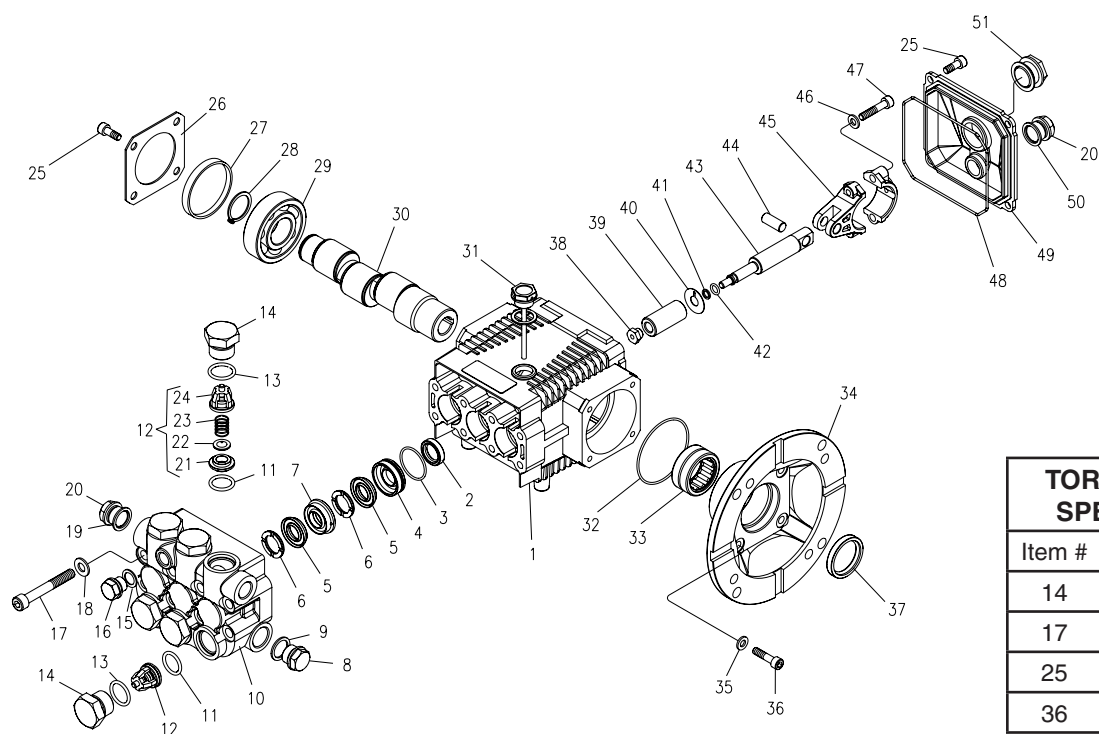
VB55 UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART #	DESCRIPTION	QTY	ITEM	PART #	DESCRIPTION	QTY
1	1-60005831	Delivery Coupl. 3/8F BSP Brass	1	16	1-10401113*	Back-up Ring, 11 x13 x 2mm	1
2	1-10307002*	O-Ring, 1.78 x 18.77 mm Ni 85	1	17	1-10306000*	O-Ring, 1.78x12.42 mm	1
3	1-60005351	Spring, 0.7x9x20 mm Sst	1	18	1-10306801*	O-Ring, 1.78x17.17 mm Ni85	1
4	1-60005231	Shutter Pin, Brass	1	19	1-60130831	Piston Holder, Brass	1
5	1-10321300*	O-Ring, 3 x 6 mm	1	20	1-60131331	Spring Guide Pin	1
6	1-14410000	Sealing Washer, 3/8 Bsp	2	21	1-16210000	Set Screw, DIN914 M4x4mm	1
7	1-60135135	Valve Housing, VB55, Brass	1	22	1-60131231	Ring Nut, M20x1 Brass	1
8	1-60130620*	Seat, 8mm + O-Ring, 1.78mm NBR85	1	23	1-60131561	Spring, 3.4x13.8x48 mm z.pl	1
9	1-60131121*	Shutter Pin, M6 Brass + Ball, 13/32" Sst	1	24	1-60130431	Valve, Regulating Insert, Brass	1
10	1-10306401*	O-Ring, 1.78x14 mm Ni85	1	25	1-60120284	Valve, Regulating Knob, PA Black	1
11	1-60130131	Spacer Ring, 7x18x7.5 mm Brass	1	26	1-60135235	Manifold, 1/2F Bsp, Brass (5-3025)	1
12	1-10400792*	Back-up Ring 7x9x2 mm	1		1-60137635	Manifold, 1/2F Bsp-3/8F Brass (5-3029)	1
13	1-10305600*	O-Ring, 1.78x8.74 mm	1	27	1-14410100	Sealing Washer, 1/2 Bsp	2
14	1-60130331	Spacer Ring, 7.3x18.5x12.7 mm Brass	1	28	1-10317510	O-Ring, 2.62x10.77 mm Vi 70	1
15	1-60130751	Piston, M6 Sst	1	29	1-60100731	Banjo Bolt, 3/8 M Bsp	1
				30	1-60100831	Banjo Bolt, 1/2 M Bsp	1
					1-60077331	Banjo Bolt, 1/2 MBsp w/1/8" NPT Pilot	1

* Kit 1-60131624 Repair Kit (K1)

SE PUMP EXPLODED VIEW

2020F
3525F



TORQUE SPECS	
Item #	Ft.-lbs
14	65
17	22
25	8
36	8
38	9
47	13

SE PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	70-020292	Crankcase	1	16	70-160121	Brass Plug G1/4	1
2*	70-000105	Plunger Oil Seal	3	17	70-180118	Manifold Stud Bolt	8
3*	70-060181	O-Ring Ø 1.78 x 28.30	3	18	70-140001	Washer	8
4*	70-120131	Pressure Ring 15mm	3	19	70-060306	Copper Washer 3/8	1
	70-120132	Pressure Ring 18mm	3	20	70-160117	Brass Plug G3/8	2
5*	70-000207	"V" Seal, dia 15mm	6	25	70-180112	Screw	12
	70-000208	"V" Seal, dia 18mm	6	26	70-020318	Bearing Cover	2
6*	70-030048	Support Ring 15mm	6	27	70-020502	Bearing Seal	1
	70-030050	Support Ring 18mm	6	28	70-150003	Snap Ring	1
7*	70-030049	Intermed Ring 15mm	3	29	70-021300	Ball Bearing	2
	70-030051	intermed Ring 18mm	3	30	70-000600	Crankshaft (2020F)	1
8*	70-160120	Brass Plug G1/2	1		70-000601	Crankshaft (2020S)	1
9	70-060307	Copper Washer 1/2"	1		70-000602	Crankshaft (2825F)	1
10	70-160228	Manifold Housing	1		70-000603	Crankshaft (2825S)	1
11	70-060155	O-Ring Ø1.78 x 15.54	6		70-000604	Crankshaft (3525F)	1
12*	See Kit Below	Valve Assembly	6	31	70-160012	Oil Dipstick	1
13*	70-060122	O-Ring Ø2.62 x 18.77	6	32	70-060183	O-Ring Ø3.53 x 55.56	1
14	70-160147	Valve Plug	6	33	70-020011	Needle Bearing	1
15	70-060308	Copper Washer 1/4	1	34	70-050095	Motor Flange 56C	1

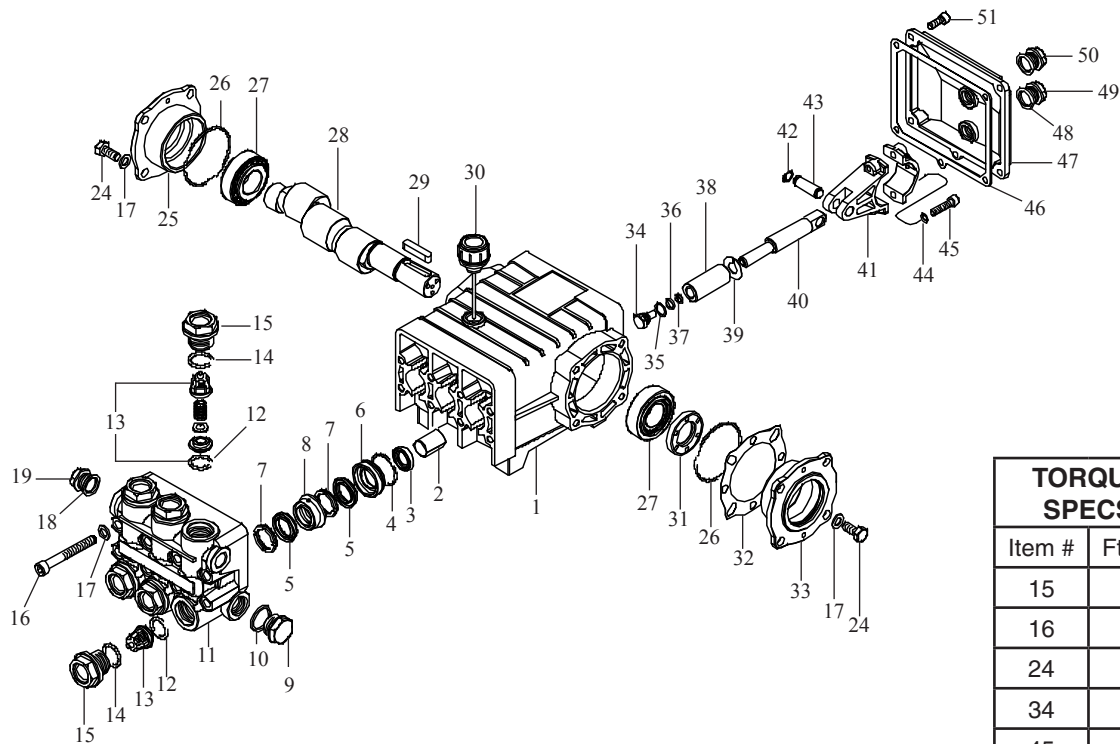
SE PUMP EXPLODED VIEW PARTS LIST (CONT.)

ITEM	PART NO.	DESCRIPTION	QTY
35	70-140002	Washer	4
36	70-180126	Flange Screw	4
37	70-000104	Crankshaft Seal	1
38*	70-030211	Plunger Nut	3
39*	70-120023	Plunger 15mm (2020F, 2825F, 3525F)	3
	70-120022	Plunger 18mm (2020S, 2825S)	3
40*	70-140027	Copper Spacer	3
41*	70-160130	O-Ring Ø1.78 x 5.28	3
42*	70-000913	Teflon Ring	3
43	70-000320	Plunger Rod	3
44	70-1502.04	Connecting Rod Pin	3
45	70-010008	Connecting Rod	3
46	70-140102	Spring Washer	6
47	70-180132	Connecting Rod Screw	6
48	70-060104	O-Ring Ø2.62 x 107.62	1
49	70-020352	Crankcase Cover	1
50	70-060302	Gasket	1
51	70-070005	Sight Glass	1

REPAIR KIT NUMBER	70-261408	70-261410	70-261409	70-261411	70-261404	70-261405	70-260028	70-260826
KIT DESCRIPTION	Plunger Seal 15mm 2020F 2825F 3525F	Plunger Seal 18mm 2020S 2825S	Complete Seal Packing 15mm 2020F 2825F 3525F	Complete Seal Packing 18 mm 2020S 2825S	Plunger 15mm 2020F 2825F 3525F	Plunger 18mm 2020S 2825S	Complete Valve	Plunger Oil Seals
ITEM NUMBERS INCLUDED	3, 5, 6	3, 5, 6	2, 3, 4, 5, 6, 7	3, 4, 5, 6, 7, 8	38, 39, 40, 41, 42	38, 39, 40, 41, 42	11, 12, 13	2
NUMBER OF CYLINDERS KIT WILL SERVICE	3	3	1	1	1	1	6	3

SM PUMP EXPLODED VIEW AND PARTS LIST

4035



TORQUE SPECS	
Item #	Ft.-lbs
15	75
16	22
24	8
34	9
45	13
51	8

SM PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	70-020209	Crankcase	1	25	70-050051	Closed Bearing Housing	1
2	70-060201	Plunger Guide	3	26	70-060163	O-Ring Ø1.78 x 60.05	2
3*	See Kits Below	Plunger Oil Seal	3	27	70-020003	Tapered Roller Bearing	2
4*	70-060107	O-Ring Ø1.78 x 31.47	3	28	70-000486	Crankshaft (4030,4035/H)	1
5*	See Kits Below	"V" Seal	6	29	70-020604	Crankshaft Key	1
6*	70-120106	Pressure Ring 18mm	3	30	70-160006	Oil Dip Stick	1
7*	70-030007	Support Ring 18mm	6	31	70-000102	Crankshaft Seal	1
8*	70-030011	Intermed. Ring 18mm	3	32	70-030102	Shim	2
9	70-160120	Brass Plug 1/2"	1	33	70-050050	Bearing Housing	1
10	70-060307	Copper Washer 1/2"	1	34*	70-180001	Plunger Bolt	3
11	70-160216	Manifold Head	1	35*	70-140012	Copper Spacer	3
12*	70-060119	O-Ring Ø2.62 x 17.13	6	36*	70-060103	O-Ring Ø1.78 x 7.66	3
13*	See Kits Below	Valve Assembly	6	37*	70-000904	Teflon Ring	3
14*	70-060165	O-Ring Ø2.62 x 20.29	6	38*	See Kits Below	Plunger (4035, 4035H)	3
15	70-160130	Valve Plug	6	39*	70-140015	Copper Spacer	3
16	70-180103	Manifold Stud Bolt	8	40	70-000301	Plunger Rod	3
17	70-140001	Washer	16	41	70-010001	Connecting Rod	3
18	70-060306	Copper Washer 3/8	1	42	70-150001	Snap Ring	6
19	70-160117	Brass Plug 3/8	1	43	70-150201	Connecting Rod Pin	3
24	70-180203	Hexagonal Screw	8	44	70-140102	Spring Washer	6

SM PUMP EXPLODED VIEW PARTS LIST (CONT)

ITEM	PART NO.	DESCRIPTION	QTY
45	70-180105	Connecting Rod Screw	6
46	70-060009	Cover Gasket	1
47	70-020350	Crankcase Cover	1
48	70-060302	Gasket, G3/8	1
49	70-160117	Brass Plug 3/8	1
50	70-070001	Sight Glass G3/8	1
51	70-180112	Cover Screw	5
52	70-000929	▲ Bach Ring 1/2" (4035H)	3

* Available in kit (See below)

▲ Not Shown

REPAIR KIT NUMBER	70-261216	70-261210	70-261217	70-260007	70-260027
KIT DESCRIPTION	*Plunger Seal	**Complete Seal Packing	Plunger	Complete Valve	Plunger Oil Seals
ITEM NUMBERS INCLUDED	4, 5, 7	3, 4, 5, 6, 7, 8	34, 35, 36, 37, 38, 39	12, 13, 14	3
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

* For M 4035H High Heat Packings, Use 70-261212 **For M 4035H High Heat Packings, Use 70-261213



SHARK LIMITED NEW PRODUCT WARRANTY PRESSURE WASHERS

WHAT THIS WARRANTY COVERS

All SHARK PRESSURE WASHERS are warranted by SHARK to the original purchaser to be free from defects in materials and workmanship under normal use, for the periods specified below. This Limited Warranty is subject to the exclusions shown below, is calculated from the date of the original purchase, and applies to the original components only. Any parts replaced under this warranty will assume the remainder of the part's warranty period. This warranty applies to the original purchaser and is not transferable.

LIMITED LIFETIME PARTS WARRANTY:

Components manufactured by SHARK, such as frames, handles, and belt guards. Forged brass pump manifold. All heating coils will have a three year warranty. Internal components (excluding oil seals) on the oil-end of all pressure washer pumps will have a seven year warranty.

ONE YEAR PARTS WARRANTY:

All other components, excluding normal wear items as described below, will be warranted for one year on parts. Warranty on these parts will be for one year regardless of the duration of the original component manufacturer's part warranty.

WARRANTY PROVIDED BY OTHER MANUFACTURERS:

Motors, generators, and engines, which are warranted by their respective manufacturers, are serviced through these manufacturers' local authorized service centers. SHARK cannot provide warranty on these items.

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following items:

1. Normal wear items, such as nozzles, guns, discharge hoses, wands, quick couplers, seals, filters, gaskets, O-rings, packings, pistons, pump valve assemblies, strainers, belts, brushes, rupture disks, fuses, pump protectors.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, incorrect installation, improper servicing, failure to follow manufacturer's maintenance instructions, or use of the equipment beyond its stated usage specifications as contained in the operator's manual.
3. Damage due to freezing, chemical deterioration, scale buildup, rust, corrosion, or thermal expansion.
4. Damage to components from fluctuations in electrical or water supply.
5. Normal maintenance service, including adjustments, fuel system cleaning, and clearing of obstructions.
6. Transportation to service center, shop labor charges, field labor charges, or freight damage.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your SHARK pressure washer by returning the completed registration card. In order to obtain warranty service on items, you must return the product to an Authorized SHARK Dealer, freight prepaid, with proof of purchase, within the applicable warranty period. If the product is permanently installed, you must notify your Authorized SHARK Dealer of the defect. The Authorized Dealer will file a claim, which must subsequently verify the defect. In most cases, the part must be returned to SHARK freight prepaid with the claim. For warranty service on components warranted by other manufacturers, the Authorized Dealer can help you obtain warranty service through these manufacturers' local authorized service centers.

LIMITATION OF LIABILITY

SHARK'S liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall SHARK'S liability exceed the purchase price of the product in question. SHARK makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustrations and specifications. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.** SHARK does not authorize any other party, including authorized Dealers to make any representation or promise on behalf of SHARK, or to modify the terms, conditions, or limitations in any way. It is the buyer's responsibility to ensure that the installation and use of SHARK products conforms to local codes. While SHARK attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product.

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